PROGRESS REPORT

OF

FOREST ADMINISTRATION

AJMERE

AND

REPORT ON THE OPERATIONS OF THE FOREST SURVEY

FOR

1879-80

WITH THE ORDERS OF THE GOVERNMENT OF INDIA.

1880

No. 663 F., dated Simla, the 12th October 1880.

From—The Hon'ble C. Grant, C.S., Offg. Secretary to the Govt. of India, Home, Revenue and Agricultural Department,

To—The Chief Commissioner of Ajmere.

I am directed to acknowledge the receipt of your Secretary's letter No. 2352S., dated the 24th August 1880, submitting, with a copy of your orders thereon, the report of forest administration in Ajmere and Merwara for the year 1879-80, and to communicate the following observations.

2. There has been no change in the area of the State Forests taken up under the Regulation of 1874, which stands at 64,428 acres as heretofore.

3. In paragraph 19 of the Annual Report of Forest Administration in Ajmere and Merwara for the year 1878-79, it was stated that, out of a total length of boundary of 968,860 feet, 373,825 feet were fenced. The repairs of these fences, together with an addition of 5,813 running feet, is reported to have cost Rs. 423 during the year. In future reports it will be useful to show separately the cost of repairs and construction of new fences if this can be arranged without inconvenience. The total length of fences and of unfenced boundaries should also be stated in the annual report.

4. The diminished number of prosecutions as compared with those in 1878-79 is satisfactory, provided that it does not indicate diminished vigilance and efficiency of the protective establishments. It is gratifying to read the account given by the Commissioner of the improved condition of these areas; but, unless cattle are excluded from those tracts which must be closed, it cannot be expected that their improvement will progress in a satisfactory manner. 4,265 head of cattle were impounded during the year, but Mr. Saunders says that this number is probably a very small proportion only of those driven into the tracts to graze. This remark seems to show that the Commissioner has not much confidence in the efficiency of his protective establishments.

5. Under the Forest Regulation the villagers have no right to graze in the State forests, and it appears from the Forest Bye-Laws of 1875 and from paragraph 17 of the report by the Inspector General of Forests regarding forest administration in Ajmere and Merwara that in certain special cases only, and under special arrangements, grazing is permitted. The villagers have, however, the right, under the Regulation, of cutting grass in the State forests, and as regards the improvement of the forests it is certainly better to encourage this mode of utilizing the large supply of cattle fodder which these protected areas are now said to produce, than to permit the grazing of cattle. Every endeavour should be made to encourage the villagers to utilize the grass. They should be allowed to carry it away on ponies and donkeys, and grazing should only be permitted in carefully selected and well-defined blocks.

6. There are, probably, tracts so far from villages that the grass cannot conveniently be utilized by cutting. If in such tracts the forest growth is sufficiently advanced to be safe against injury by cattle, they might, under proper precautions, be opened to pasture, though it would probably not be advisable to admit goats and camels. You draw attention to the amounts paid in the shape of fines for the precarious grazing enjoyed without permission. This remark suggests the question whether it would not be well to require payment for grazing in some of those areas where grazing is permitted.

7. The Governor General in Council gathers from the published reports that one of the main objects of forest conservancy in these districts is to place the State forests in a position to furnish fodder during seasons of drought, the recurrence of which from time to time is unavoidable. But such help in seasons of drought will in vain be looked for on dry stony hills. It can only be expected if the forest growth is permitted to grow up.

8. As regards fire-protection the Commissioner admits, in paragraph 41 of his report, that the endeavours of the local officers have not been altogether successful during the year under review, and he adds that fire is now the great enemy of protection.

On this subject you remark in paragraph 6 of your orders on the report, that a redistribution of the Budget allotment is necessary in order to provide sufficient funds for the protection of the forests from fire. This you will no doubt arrange for, as the power of redistribution rests entirely with you. The clearing of the needful fire lines and the organization of a sufficient establishment of fire watchers during the hot season should be regarded as the most important work of the year, and all subordinate officers, Civil, Police and Forest officers must be impressed with the necessity of ensuring by all means in their power the protection against fire of the State forests.

9. The Commissioner's report with your orders thereon, will be printed and circulated as usual. It is suggested that the report may, with advantage, be still further condensed in future years.

No. 664F.

Copy of the above, with a copy of the Report, forwarded to the Foreign Department for information.

G. C. O. Press, Simla,—No. 618 H., R & A. D.,—14-10-80.—2 50.

AJMERE FOREST REPORT FOR 1879-80

No. 2352S., dated the 24th August 1880.

From—MAJOR J. P. STEEL, R.E., Secretary to Agent, Governor General, and Chief Commissioner in the Public Works Department, Rajputana,

To—The Secretary to the Government of India, Home, Revenue and Agricultural Department.

I AM directed by the Chief Commissioner to submit the Annual Report of Forest Administration for 1879-80, together with his review thereof.

Extract from the Proceedings of the Chief Commissioner of Ajmere and Merwara in the Forest Department,—No. 2351S., dated the 24th August 1880.

READ—

Progress Report of Forest Administration in Ajmere and Merwara for the year 1879-80.

RESOLUTION.—The report is brief and clear, and the instructions issued regarding its punctual submission have been fully appreciated.

2. The growth of forest revenue and gradual expansion of the forest conservancy are satisfactory. Though there has been no increase during the year in the area of the State forests taken up under the regulation, measures for the acquisition of two tracts—the Dewair in Merwara and the Danta tank catchment in Ajmere—were matured during the period. Formal declarations have since been made, and the areas, aggregating 13,447 acres, are now under forest conservancy.

3. It is especially noticeable that the small quantities of charcoal and wood supplied from Merwara tracts obtained encouraging prices: *vide* paragraph 32 of the Commissioner and Conservator's report. The cuttings recommended by Dr. Brandis in paragraph 31 of his suggestions regarding Ajmere and Merwara forest administration were not undertaken during the year for want of efficient supervision.

4. It would appear from the Commissioner's report that he is now prepared to submit his opinion on the various proposals made by Dr. Brandis with regard to the future forest administration of this Province. The works sketched in the forecast of 1875 have all been carried out. The expenditure has been kept well within the limit of one lakh of rupees.

5. The Chief Commissioner would be glad to receive the proposals for a second forecast as early as possible, so that the progress of the Department may continue without interruption.

6. The Commissioner and Conservator's remarks on the forest conflagrations point out the necessity for a redistribution of the budget allotment in order to provide sufficient funds for the protection of the forests from fire. The fires appear to have been this year unusually bad, and greater vigilance appears certainly needed, especially in the Todgarh tract. It would appear necessary that along all frequented paths fire lines should be maintained and places for cooking, &c., should be cleared.

7. Paragraph 6 of the Commissioner and Conservator's report shows the number of cattle impounded. It would appear from the concluding remark that large numbers of cattle are driven into the several forest tracts for grazing without permission, and that the actual fines and forfeitures enforced during the year brought in an income to the Pound Fund of Rs. 1,105-12. If the owners afford to pay this sum for the precarious grazing they enjoy, without a pass, probably some arrangement might be found feasible by which both the people and the forest revenue could be benefited.

8. The matter of revenue realised from Nag Pahar, Mohwa Bir, and the Madar hill tracts has not been finally decided as yet. The Commissioner has explained that, as nothing was settled in the year under review, the subject has not been mentioned. A separate report is promised.

The Conservator brings to notice prominently the need for the services of a regularly trained forest officer, and the Chief Commissioner entirely concurs in his remarks on this subject.

10. On the whole, the report appears to be a very satisfactory one, and the Chief Commissioner recognises with satisfaction the interest taken in this important work by the Commissioner and his assistants.

No. 107F., dated the 12th August 1880.

From—L. S. Saunders, Esq., C.S., Commissioner and Conservator of Forests, Ajmere-Merwara,

To—The Secretary to the Chief Commissioner in the Public Works Department, Rajputana.

I have the honour to forward, for the orders of the Chief Commissioner, the Progress Report of Forest Administration in the Ajmere-Merwara districts for 1879-80.

Reserved Forest Tracts.

Area.

2. The area has undergone no change during the year, and stood at 64,428 acres as detailed in Statement Form No. 45.

The Dewair and Danta tracts have only been taken up after the close of the year, and the area though demarcated in the year under report will be shown in the report for 1880-81. A patch of land, measuring 27 acres and belonging to the Nazul called the Shikast Masjid not included in the above, is still under charge of the Forest Department.

Nurseries.

3. The nurseries on the 1st April 1879 consisted of 49 acres (21 in Ajmere and 28 in Merwara). The 21 acres in Ajmere include the area of the Nazul gardens, then in charge of the Forest Department and used as subsidiary nurseries.

These gardens have since reverted to the charge of the Superintendent of Agriculture and Gardens, leaving one acre as the main nursery, the property of the Forest Department. This nursery is not successful, and it is proposed to enlarge it and alter its present location, which is not well adapted for supervision.

The Merwara nursery at Beawar has not been kept as well stocked with young trees as it should have been. Too much attention was given by the Sub-Assistant Conservator to the growth of fruit and raising of vegetables; this has been put a stop to.

Protection and Improvement Establishment.

4. There was no change in the establishment. The strength and cost was as follows:—

		Actual cost in 1878-79.	Budget Estimate, 1879-80.	Actual cost in 1879-80.
		Rs.	Rs.	Rs.
1 Sub-Assistant Conservator ...	Supervising ...	2,250	3,400	2,400
1 Clerk	Office Establishment	1,494	1,500	1,498
1 Mohurrir				
3 Chaprasis				
5 Foresters	Forestry ...	3,248	3,644	3,234
32 Forest guards				

The pay of the Sub-Assistant Conservator was increased by Rs. 25 for six months, which accounts for the increased cost under head Supervision. The protective establishment is still only temporary. Proposals for making it a permanent establishment will shortly be submitted after it has been determined what extra establishment is actually required for the new tracts of Dewair and Danta.

Prosecutions.

5. The prosecutions and convictions were as follows :—

	Prosecutions.						Convictions.					
	1877-78.		1878-79.		1879-80.		1877-78.		1878-79.		1879-80.	
	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.
Ajmere ...	100	314	107	230	89	197	96	285	94	195	83	172
Merwara ...	32	154	46	208	27	93	28	68	37	121	25	84
Total ...	132	468	153	438	116	290	124	353	131	316	108	256

The foregoing table shows a decrease of 148, or 33·8 per cent. in the total number of persons prosecuted when compared with the preceding year. There were 37 fewer cases this year. Of the 27 cases which occurred in Merwara, 16 belong to the Todgarh tract, 8 to Chang, and 3 to the Borwar-Kotra and Anspahar tracts. In three other tracts no offences are reported to have occurred. Probably in the Todgarh tract, with 40,000 acres, all offences are not detected; but the population is sparse in these parts: 16 cases, involving 72 persons, were all that were prosecuted there. Of 290 persons involved in both districts, 256, or 88 per cent., were convicted this year.

There was a good crop of grass everywhere: hence there was less temptation to trespassing; but in these cases prosecuted convictions were unusually numerous.

6. The number of cattle impounded from the various forest tracts is shown below :—

		1878-79.	1879-80.
Ajmere.	Mohwa-Madar ...	423	425
	Nag Pahar ...	241	446
	Taragarh Valleys ...	242	150
	Srinagar Bir ...	836	510
	Rajausi ...	49	85
	Total ...	1,791	1,6[illegible]6
Merwara.	Chang ...	300	233
	Hattum ...	479	93
	Biliawas ...		92
	Todgarh ...	1,115	1,860
	Beawar Nursery ...	178	52
	Delwara ...		156
	Borwar-Kotra ...	242	159
	Anspahar ...	5	4
	Total ...	2,319	2,[illegible]
	Grand Total ...	4,110	4,265

Half the receipts from fines and sales of cattle found trespassing in the reserved tracts will, in future, form part of the forest revenue. The amount due on this account in the Ajmere district was Rs. 154-4 and in Merwara Rs. 244-6, total Rs. 398-10. The number of cattle impounded is probably a very small proportion of those driven into these tracts to graze.

Fire protection.

7. The cost of fire protection during the last three years ending 30th June has been as follows:—

		1877-78.			1878-79.			1879-80.		
		Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
AJMERE.	Nag Pahar	.....			15	0	0	16	0	0
	Mohwa Bir	.....			.....			27	0	0
	Srinagar	.....			.....			38	8	6
	Rajausi	.....			.....			52	9	7
	Taragarh	.....			.....			41	2	0
	Total ...	.....			15	0	0	175	4	1
MERWARA.	Todgarh	151	5	4	474	14	4	530	6	3
	Biliawas	33	10	0	54	15	6	53	10	6
	Anspahar	32	10	0	80	4	0	76	1	6
	Total ...	217	9	4	610	1	10	660	2	3
	GRAND TOTAL ...	217	9	4	625	1	10	835	6	4

The conflagrations which occurred during the year are shown in the following table:—

Date on which fire occurred.		Name of tract.	Total area.	Area affected by fire.	Percentage of area affected to total area.	Number of forest guards.	Number of fire watchers.	Area per forest guard and watcher.
			Acres.	Acres.	Acres.			Acres.
January 1880 ...	14	Mohwa Madar ...	2,812	14	·49	3	.....	937·3
May 1880 ...	27	Ditto ...		80	2·84			
January ...	16	Srinagar Bir ...	3,575	½	·001	3	2	715
February ...	29	Rajausi tract ...	1,260	160	12·6	2	1	420
April ...	7	Taragarh Valleys ...	1,016	1	·009	3	1	254
February ...	2	Borwar and Kotra ...	3,923	2½	·063	3	.....	1307·6
March ...	4	Todgarh tract ...	40,048	432	1·07	6	6	3337·4
Do. ...	23	Ditto ...		1,224	3·05			

The serious fires were only four, one in Rajausi, one in Mohwa Bir, and two in the Todgarh tracts, which affected an area aggregating 1,896 acres. The fire, which is shown to have broken out in the Rajausi tract on the 29th February 1880, affected 160 acres out of the 1,260 under protection, or 12·6 per cent. An extra fire watcher was entertained here from 13th April to 20th June 1880, in addition to the permanent establishment. The area per watcher was 420 acres. Grass, Euphorbia bush and a few Nim trees only were burnt. The origin of the fire could not be ascertained.

8. The two fires in the Mohwa Bir occurred through the carelessness of some unknown person. The total area injured was 94 acres. The damage was confined to grass and dry Euphorbia bushes. No trees or undergrowth are reported to have been burnt. Most of the dry wood had been sold and removed. Two extra watchers were employed by the villagers in addition to the Government agency.

9. In the Todgarh tract two fires occurred on the 4th and 23rd of March 1880. The former fire originated through the carelessness of some Mina marauders who plundered a hamlet in the morning and then retired to the jungles, where they apparently cooked their food and left without extinguishing the fire, which, being driven by the wind, soon spread over an area of 432 acres and destroyed many young trees. It was extinguished by the forest establishment, assisted by 151 zamindars. The damaged portions were examined by the Sub-Assistant Conservator, and the fire lines are reported by him to have been in good order. The second fire occurred in the neighbourhood of Bagmal and Ruparel. The wind was high, and it extended over an area of about 1,224 acres.

10. This fire occurred through the carelessness of the villagers in the neighbourhood, who are in the habit of using the footpaths on their way to Marwar, as they avoid the regular ghât roads through fear of the Minas. They have been in the habit of resting in retired places and cooking their food there. The fire was suppressed with the assistance of 174 zamindars.

11. There is, I am happy to say, no reason to believe the fires were due to any wilful negligence on the part of the neighbouring villagers. The zamindars having rendered prompt assistance in suppressing five of the fires, received rewards aggregating Rs. 144. Three persons were prosecuted for refusing assistance; one lambardar was fined. The zamindars in connection with the Rajausi tract were acquitted, but they will not be allowed to cut grass in the reserve for one year, and this will probably have the deterrent effect desired.

12. The usual fire lines in the Anspahar and Biliawas tracts were cleared and kept in good order. In the former tract, the fire lines run between the Meywar and British boundaries. The cost in Anspahar was Rs. 76-1-6 or 3 annas per chain, while in Biliawas the cost falls at 3 annas 5 pies per chain.

A heavy fire is reported to have occurred in the Bednor (Meywar) boundaries near the Anspahar tract, but it was checked by the fire lines.

13. In the Todgarh tract, the fire lines along the Marwar boundary were further widened by 10 to 15 feet in some places.

The length was the same as in former years, *viz.*, 49 miles and 45 chains. The cost of clearing and maintaining these lines was Rs. 395-6-3 or 2 annas 5 pies per chain.

The tract is divided into six parts, and, in addition to the ordinary establishment, six extra fire watchers, one for each division, were entertained during the hot season at a cost of Rs. 85.

The fire lines are cleared under the supervision of the Sub-Assistant Conservator. Major Lassalle, the Assistant Commissioner, only returned from England late in the camping season, and they were therefore not examined this year by an Assistant Commissioner.

14. In the Ajmere District five extra watchers were entertained, and cost Rs. 81-4-1 as follows:—

	Rs.	A.	P.
Rajausi tract	13	9	3
Srinagar tract	33	8	6
Taragarh valleys	18	2	0
Nag Pahar tract	16	0	0
Total ...	81	4	1

15. In Ajmere the risk from fire is not so great as in Merwara, as the grass is more valuable near the town and is regularly cut by the villagers.

In Merwara this source of danger is very real; grass grows in abundance, and comparatively very small quantities are cut by the villagers. It is getting every year more necessary to maintain an efficient system of fire conservancy. The Inspector General of Forests estimates, in paragraph 137 of his report, the probable annual cost under this head at Rs. 2,000; and if this sum can be made available, the fire conservancy will be more effective. The Merwara forest

will have to be divided into still smaller divisions, and more extra watchers must be entertained. The amount available in the current year's budget is only Rs. 850, including the cost of new fire lines in the new Dewair tract, and in Borwar where much has still to be done. This sum can, however, be increased by a transfer of Rs. 1,000 provided under cost of felling operations, if no professional officer be deputed to carry out this work during the year.

16. The Rajputana State Railway on leaving Beawar in the direction of Bombay runs for about a mile alongside the Chang tract, and the engines twice set fire to the grass. Orders have now been issued by the Locomotive Department to the engine drivers to be more careful, and I have ordered the grass to be cleared alongside the line; it may subsequently be found necessary to make a broad fire line here.

Fencing.

17. The work done under this head was as shown below.

	Name of tract.	Length of fencing. Constructed.	Length of fencing. Repaired	Cost in 1879-80.	Cost in 1878-79.
		Feet.	Feet.	Rs. A. P.	Rs. A. P.
Ajmere.	Mohwa Madar	...	14,045	74 13 0	78 0 6
	Nag Pahar	...	11,030	77 15 3	78 1 6
	Taragarh Valleys	...	...	...	31 6 0
	Rajausi	...	1,819	18 12 0	151 9 0
	Srinagar Bir	4,100	1,000	92 12 0	228 2 0
	Total ...	4,100	27,894	264 4 3	567 3 0
Merwara.	Hattun tract	1,713	727	99 2 6	...
	Delwara Bir	...	1,550	60 0 0	118 1 0
	Chang Bir	...	1,600		
	Chang tract	...	...	...	183 0 0
	Total ...	1,713	3,877	159 2 6	301 1 0
	Grand Total ...	5,813	31,771	423 6 9	868 4 0

18. The addition of 5,813 running feet was made to the fencing constructed in former years, and 31,771 feet were repaired. The total cost amounted to Rs. 423-6-9. The Euphorbia hedges require at first constant repairs, but when well established they form a very satisfactory barrier. The cost of these repairs has been decreasing.

19. A sum of Rs. 201 was spent on construction of bunds across valleys and ravines, with a view of retaining the silt and thus forming soil for planting in, as proposed by the Inspector General of Forests. The expenditure incurred was as follows :—

	Rs. A. P.
Taragarh Valleys	136 13 6
Rajausi tract	64 2 6
Total ...	201 0 0

The work was done in February and March 1880. Considerable advantages will no doubt accrue after the rains, and like works should be continued elsewhere as money becomes available.

Inspection paths.

20. The cost of inspection paths was as follows:—

	Name of tract.	Length of paths put in order.	Cost.
		Feet.	Rs. A. P.
AJMERE.	Taragarh Valleys	25,430	195 0 6
	Nag Pahar	5,950	40 1 6
	Srinagir Bir	1,975	24 5 0
	Total ...	33,355	259 7 0
MERWARA.	Chang	12,155	49 13 3
	Todgarh	86,805	149 5 0
	Total ...	98,960	199 2 3
	GRAND TOTAL ...	1,32,315	458 9 3

The cost during 1878-79 was Rs. 310-15-3 (Rs. 160-15-3 in Ajmere, and Rs. 150 in Merwara). Most of the inspection paths are in good order, but they require small sums of money to be spent on them annually.

Buildings.

21. The cost of buildings has been as follows:—

	Name of tract.	1878-79.	1879-80.
		Rs. A. P.	Rs. A. P.
AJMERE.	Taragarh Valleys	147 7 9	18 7 9
	Nag Pahar	0 4 0	310 10 9
	Srinagar Bir	23 3 6	1 8 0
	Main Nursery	7 8 0	...
	Ajmere godown	0 15 0	...
	Rajausi tract	...	10 0 0
	Mohwa Madar	...	121 7 0
	Total ...	179 6 3	462 1 6
MERWARA.	Chang	0 15 0	29 14 6
	Todgarh and Barakhan	9 0 0	...
	Borwar-Kotra	95 9 0	...
	Delwara Chang Birs	80 10 7	...
	Beawar Nursery	63 5 0	28 10 3
	Bell of Arms Nursery	126 11 6	130 0 0
	Hattun and Sheopura	...	15 9 0
	Biliawas	...	9 5 0
	Total ...	376 3 1	204 6 3
	GRAND TOTAL ...	555 9 4	666 7 9

As stated in last year's report, the bungalow on the top of the Nag Pahar had to be reconstructed.

The chowki situated in the Madar tract fell down and had to be rebuilt. Rs. 130 was spent on urgent repairs to the Bell of Arms used as a forest godown and Office of the Sub-Assistant Conservator at Beawar. Most of the chowkis have now been made of a permanent nature with slab instead of tiled roofs.

Plantations.

22. The cost during the past three years was—

	Name of tract.	1877-78.	1878-79.	1879-80. Cost under A VIII d.	1879-80. Feed of cattle A VI b.	Total.
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
AJMERE.	Mohwa Madar	306 4 8	165 6 4	120 5 4	8 14 2	129 3 6
	Nag Pahar	336 7 6	255 1 9	244 6 9	...	244 6 9
	Taragarh Valleys	444 11 0	432 15 11	443 7 8	16 1 0	459 8 8
	Srinagar Bir	153 5 3	105 11 3	154 4 9	1 0 5	155 5 2
	Shikast Masjid	65 7 5	65 3 8	61 15 4	...	61 15 4
	Total ...	1,306 3 10	1,024 6 11	1,024 7 10	25 15 7	1,050 7 5
MERWARA.	Chang	104 13 6	90 11 2	60 8 2	...	60 8 2
	Hattun-Shoopura	84 0 6	84 2 0	84 1 11	...	84 1 11
	Biliawas Taragarh ...	72 2 6	82 12 6	66 1 3	...	66 1 3
	Todgarh-Barakhan ...	141 2 9	83 4 0	79 7 0	...	79 7 0
	Dilwara-Chang Birs ...	73 9 11	193 14 3	56 3 10	...	56 3 10
	Total ...	475 13 2	534 11 11	346 6 2	...	346 6 2
	GRAND TOTAL ...	1,782 1 0	1,559 2 10	1,370 14 0	25 15 7	1,396 13 7

The cost for 1879-80 shows a decrease of Rs. 162-5-3 over that of the past year. In the Srinagar tract a well was repaired at an expenditure of Rs. 66-10-3 which accounts for the increased expenditure in that tract. The watering establishment was dismissed during the rains.

23. Of the 8,889 trees under maintenance in the previous year, 2,853 are reported to have died in the hot season; about 7,420 trees were planted out in the rains, of which 1,230, or 17 per cent., died in the cold weather owing to severe and continuous frost. The number of trees requiring watering is said to be 5,868. The estimated cost for the current year is Rs. 2,000 or about 5½ annas per tree. The total area covered by plantations is 387 acres as detailed in Form No. 46, of which 381 acres are in land taken up under the Regulation and 6 acres are in the Nazul tract called the Shikast Masjid under the management of the Forest Department.

24. Mr. White, the late Assistant Commissioner, inspected the reserves in the Ajmere district in January last; he reports that the hill sides of the west slopes of Barinal and Imlikund in the Taragarh Valleys are rapidly being covered with dhaukra and salar. The patches of Dendrocalamus are visibly spreading. The teak trees are alive and look healthy. The blackwood trees planted in the nursery have made fair progress. The Rajausi tract, which was entirely barren in May 1878, has in one season's conservation done a good deal, and there is a fair show of salar, nim, dhaukra, &c., springing up.

25. Of the 250 Carob trees received from Saharanpur in 1878, only 74 are now alive (45 in Merwara and 29 in Ajmere); these are so far doing well. The Assistant Commissioner of Merwara does not consider the progress in plantations to be satisfactory, and he remarks on the excessive cost of plantations.

26. Scattering seed broadcast, and ploughing it in during the rains on level places, is a comparatively cheap method of reproduction; but Dr. Brandis states in paragraph 21 of his report that the present system of carrying on cultural operations is economical and recommends its continuance; and I think for experimental cultivation it will repay itself if carefully supervised.

27. The cost of the nurseries amounted in Ajmere to Rs. 308, and in Merwara to Rs. 584. In Ajmere fruit trees were sold and realised Rs. 138, but young forest trees are given, when they can be spared, gratis to all persons asking for them. About 14,174 trees were sent out of the nursery, of which 188 were given gratis to applicants, and the rest were planted out in the various tracts and gardens or on the roads.

More than 5,000 young plants, varying from two inches to eight feet high, are said to be at present in the nursery.

28. The Beawar Nursery management has been far from good, and the raising of young trees did not appear at one time to be considered, as before mentioned, of as great importance as the raising of fruit and vegetables. The Assistant Commissioner has, however, now insisted on the Sub-Assistant Conservator confining his attention to arboriculture.

Sowing Operations.

29. The cost of sowing operations in Ajmere amounted to Rs. 84, and in Merwara to Rs. 105.

In Ajmere most portions of the seeds germinated fairly well.

In Merwara about 50 per cent. of the seedlings are said to have been killed by frost. All the plants in shady places are doing well. On the whole, this method of reproduction is promising if proper and intelligent attention be given to it.

The coppicing of dhaukra trees cut in the Todgarh tract in 1878 by the Inspector General of Forests, and subsequently by the Assistant Commissioner in July 1879, have sprouted as reported last year, and are doing well.

Requirements of Zamindars.

30. About 747 dandas, ballies and dry trees, were given to the zamindars of Todgarh for household and agricultural requirements; grass was freely cut in the tracts around Ajmere; in Merwara some complaints were made about delays in obtaining passes, and the Sub-Assistant Conservator was taken to task for certain irregularities which occurred there.

Financial Results.

31. The receipts and expenditure were as follows:—

	Regular Estimate.			Actuals.		
	Rs.	A.	P.	Rs.	A.	P.
Receipts	1,000	0	0	1,860	13	1
Charges, A Conservancy and Works	7,500	0	0	5,280	6	3
Charges, B Establishments	8,700	0	0	8,469	10	4
Total expenditure ...	16,200	0	0	15,750	0	7
Deficit ...	15,200	0	0	11,889	3	6

32. The receipts were realised from the following sources:—

Heads.	Particulars.	Ajmere.			Merwara.			Total.		
		Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
I b.	Sale of charcoal, 193 maunds	...			169	12	4	643	14	3
...	" wood, 784 maunds	...			474	1	11			
II b.	Dry wood and Euphorbia bush	14	13	0	1	1	0	15	14	0
II c.	Bamboos	2	2	0	1	4	9	3	0	9
II d.	Sale of grass	200	13	7	...			200	13	7
II e.	Wax and honey	...			44	10	0			
...	Young fruit trees	138	2	0	0	12	0			
...	Babul pods	11	14	0	...			212	1	9
...	Oranges and plums	...			13	0	0			
...	Sundry sales	1	9	6	2	2	3			
V a.	Fines and forfeitures	524	12	0	208	7	3	733	8	3
V c.	Unserviceable stock	26	4	6	25	3	0	51	7	6
	Total ...	920	6	7	940	6	6	1,860	13	1

33. The expenditure under A Conservancy and works was as follows:—

Heads.	Particulars.	Ajmere.	Merwara.	Total.
		Rs. A. P.	Rs. A. P.	Rs. A. P.
AI. b.	Carriage of wood from Chang	...	266 4 9	266 4 9
AII.	Petty charges	4 8 11	0 0 10	4 9 9
AVI a	Purchase of cattle	64 0 0	32 0 0	96 0 0
" b.	Feed and keep of cattle	35 7 6	3 12 4	39 3 10
" c.	Tools	48 9 0	38 4 5	86 13 5
AVII a.	Inspection paths	259 7 0	199 2 3	458 9 3
" b.	Buildings	462 1 6	204 6 3	666 7 9
AVIII d.	Plantations	1,024 7 10	346 6 2	1,370 11 0
"	Cost of nurseries	298 13 3	551 11 0	850 8 3
"	Sowing	83 11 4	104 11 1	188 6 5
"	General establishment	143 0 0	...	143 0 0
"	Value of seeds unused in stock ..	...	0 14 2	0 14 2
	Total ...	2,424 2 4	1,747 9 3	4,171 11 7
	Deduct value of seeds issued from stock ...	7 5 1	...	7 5 1
	Balance ...	2,416 13 3	1,747 9 3	4,164 6 6
AVIIIe.	Protection from fire.	74 0 0	410 14 1	484 14 1
" f.	Fencing	264 4 3	159 2 6	624 6 9
"	Bunds	201 0 0	...	
AIX c.	Other charges	3 15 7	2 11 4	6 10 11
	Total ...	2,960 1 1	2,320 5 2	5,280 6 3

34. Of the one lakh of rupees sanctioned by the Government of India for forest expenditure during the five years ending 31st March 1880, the sum actually expended was only Rs. 91,925, or, deducting receipts a net cost of Rs. 84,506 altogether to Government.

Year.	Receipts.	Expenditure. A Conservancy and works.	Expenditure. B Establishment.	Expenditure. Total.	Net expenditure.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1875-76	410 0 0	12,963 0 0	14,383 0 0	27,346 0 0	26,936 0 0
1876-77	905 0 0	11,433 0 0	11,025 0 0	22,458 0 0	21,553 0 0
1877-78	3,002 0 0	6,961 0 0	7,965 0 0	14,926 0 0	11,924 0 0
1878-79	1,241 0 0	5,182 0 0	8,263 0 0	13,445 0 0	12,204 0 0
1879-80	1,861 0 0	5,280 0 0	8,470 0 0	13,750 0 0	11,889 0 0
Total ...	7,419 0 0	41,819 0 0	50,106 0 0	91,925 0 0	84,506 0 0

A forecast for another period of five years is under preparation. It is hoped to confine it to an expenditure of half a lakh of rupees. A statement of the charges thrown over each tract from the commencement of forest operations has been prepared and will shortly be submitted with the new forecast for the next five years.

Remarks about special tree seeds.

35. The experiments made here have not been very successful. The Ajmere nursery, as before reported, is inconveniently situated for supervision, and is almost destitute of shade; the Beawar nursery, though conveniently situated, has been much mismanaged. Many of the seeds sent for experiment have been most successful in the Nazul and municipal gardens to which I always send a portion of all seeds received.

36. The bamboo seed sent to us has not been successful and failed in every place. Some seed procured on the spot has been more successful.

37. A few Carob trees, both in Ajmere and Beawar, have outlived the year, and in a few instances produced pods. A few specimens have been planted out in the Dilwara Bir and are doing well.

38. The *Dodonæa viscosa* has germinated freely in the municipal gardens, and will be planted out in some of the tracts as suggested by the Inspector General of Forests, but I fear it will only answer along nullahs and in places retaining moisture.

39. The *Pinus longifolia* seed, of which we have a specimen tree in the Dowlat Bagh, about 25 feet high, has germinated freely, and if it can be saved from the squirrels, it will, I believe, grow well here.

40. Eight plants of the *Pithecolobium saman*, reported last year as having germinated, are now from 1½ to 2 feet high. Of the Mesquit bean seeds sown in 1878, upwards of 200 plants have attained a height of 3 feet, and have been planted out in some of the tracts.

General Remarks.

41. After five years' conservation there is much in these forest reserves to encourage us; the appearance of the hills and country side in these tracts is quite altered. The people even have begun to recognise the advantage to be obtained by the experiment we have introduced. We have been blessed with another year of plentiful rainfall; the undergrowth has become in places in Merwara nearly impenetrable, and in the ravines and valleys I have been surprised to see the number of fine young trees springing up. Our great enemy now is fire. We have not been successful this year in keeping fires out of our reserves, and we must undoubtedly spend more money and labour in future on fire protection. As the reserves become more valuable, the dangers of fire increase almost in geometrical proportion; and if we are to reap any benefit from our past exertions, we must be prepared to increase our supervision, and divert expenditure from other heads to this object. The time has also come when we may hope to obtain a little return for the past expenditure; and if satisfactory arrangements could be made for professional supervision, thinning and felling in a few places might be commenced.

42. Mr. White, for nearly the whole year, and Captain Robertson and Major Lassalle for small portions of the year, have devoted much of their time and trouble to improving the forest reserves. All three officers have shown much interest in the matter; but the supervision under them has not been good. I have again to make a report far from favourable to Mohamad Anwar Khan, Sub-Assistant Conservator of Forests, who has shown that he is in no way to be trusted. Since Mr. Moir has left the Province, he has evinced but little interest in his work; and I have had serious thoughts of recommending that the promotion that was then given him should be rescinded. He is now about to proceed on a years' furlough, and I trust that at the end of that time he may be removed to a position where he will be under more immediate supervision than he can be here. Munshi Chuttan Lal, in charge of the Ajmere Reserves, is at least reliable, obedient and intelligent, but his knowledge of and interest in forest work is, I fear, much on a par. We have asked for a regularly trained forest officer; and if a satisfactory officer be deputed, I think it may be desirable to place all the forests again under charge of him.

Annual Form No. 45.—(*Prescribed.*)

Forest Department—Ajmere-Merwara—Area of Reserved Forests, 1879-80.

Division or Range.	Name of Forest.	Area on 1st April 1879.		Added during the year.		Excluded or transferred to other heads.		Total on 31st March 1880.	
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.
Ajmere	Mohra Madar Hill	4	2,812	...	...	...	...	4	2,812
	Nag Pahar	4	2,660	...	...	...	...	4	2,660
	Taragarh Valleys	2	1,016	...	...	...	...	2	1,016
	Srinagar Bir	6	3,575	...	...	...	...	6	3,575
	Rajausi	2	1,260	...	...	...	...	2	1,260
	Total ...	18	11,323	...	...	...	...	18	11,323
Merwara ...	Chang	4	2,341	...	...	...	...	4	2,341
	Hattun and Sheopura	3	1,920	...	...	...	...	3	1,920
	Biliawas and Taragarh	5	3,172	...	...	...	...	5	3,172
	Todgarh and Barákhan	63	40,048	...	...	...	...	63	40,048
	Dilwara and Chang Birs	...	235	...	...	...	...	...	235
	Borwár and Kotra	6	3,923	...	...	...	...	6	3,923
	Anspahar	2	1,466	...	...	...	...	2	1,466
	Total ...	83	53,105	...	...	...	...	83	53,105
	Grand Total ...	101	64,428	...	...	...	...	101	64,428

Annual Form No. 46.—(*Prescribed.*)

Forest Department,—Ajmere-Merwara—Area of Plantations, 1879-80.

Division.	Name of Plantation.	On 1st April 1879.		During 1879-80.		On 31st March 1880.		Remarks.
		Area.	Total Cost.	Area added.	Cost.	Total Area.	Total Cost.	
		Acres.	Rs. A. P.	Acres.	Rs. A. P.	Acres.	Rs. A. P.	
	Out of the area taken up under the Regulation.							
Ajmere ...	Mohwa Madar Hill	83	5,111 14 9	...	129 3 6	83	5,241 2 3	
	Nag Pahar	23	5,364 10 5	...	244 6 9	23	5,609 1 2	
	Taragarh Valleys	96	5,219 8 7	2	459 8 8	98	5,679 1 3	
	Srinagar Bir	8	449 4 0	...	155 5 2	8	604 9 2	
	Total ...	210	16,145 5 9	2	*988 8 1	212	17,133 13 10	* Expenditure under— Rs. A. P. A VIII d ... 962 8 6 A VI b ... 25 15 7 Total ... 988 8 1
Merwara ...	Chang Tract	15	760 5 5	...	60 8 2	15	820 13 7	
	Hattun and Sheopura	30	708 9 6	...	84 1 11	30	792 11 5	
	Biliawas and Taragarh	12	486 8 3	...	66 1 3	12	552 9 6	
	Todgarh and Barakhan	46	414 5 10	...	79 7 0	46	493 12 10	
	Dilwara and Chang Bira	66	460 7 2	...	56 3 10	66	516 11 0	
	Total ...	169	2.830 4 2	...	346 6 2	169	3,176 10 4	
	Grand Total—Carried over ...	379	18,975 9 11	2	1,334 14 3	381	20,310 8 2	

Annual Form No. 46.—(*Prescribed*)—continued.

Forest Department—Ajmere-Merwara—Area of Plantations, 1879-80.

Division.	Name of Plantation.	On 1st April 1879. Area.	On 1st April 1879. Total Cost.	During 1879-80. Area added.	During 1879-80. Cost.	On 31st March 1880. Total Area.	On 31st March 1880. Total Cost.	Remarks.
		Acres.	Rs. A. P.	Acres.	Rs. A. P.	Acres.	Rs. A. P.	
	Brought over ...	379	18,975 9 11	2	1,334 14 3	381	20,310 8 2	
	Tracts not taken up under the Regulation.							
Ajmere	Shikast Masjid	6	783 11 8	...	61 15 4	6	845 11 0	
	Total Plantations ...	385	19,759 5 7	2	1,396 13 7	387	21,156 3 2	
	Nurseries.							
Ajmere	Main Nursery	1	2,268 8 5	...	308 5 2	1	2,576 13 7	
	Shahjahani Nursery	11	1,506 6 11	— 11	.....	...	1,506 6 11	
	Bibi Chilla Nursery	9	113 14 3	— 9	.....	...	113 14 3	
	Total ...	21	3,888 13 7	*— 20	†308 5 2	1	4,197 2 9	
Merwara	Beawar Nursery	28	4,522 9 0	...	‡584 6 7	28	5,106 15 7	
	Grand Total ...	49	8,411 6 7	— 20	892 11 9	29	9,304 2 4	

* No longer under Forest Department.

† Expenditure under—

	Rs. A. P.
A VI b ...	9 7 11
A VIII d ...	298 13 3
Total ...	308 5 2

‡ Expenditure under—

	Rs. A. P.
A VI b ...	3 12 4
A VI c ...	6 5 0
A VII b ...	28 10 3
A VIII d ...	551 11 0
Total ...	584 6 7

Form No. 47.—(*Suggested.*)

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Forest Tracts protected from fire during the dry season of 1880 (*to accompany report,* 1879-80).

Division.	Forest Tracts.	Up to 30th June 1879.		During dry season of 1880.					Year when protection commenced.	Remarks.
		Area actually protected.	Total Cost.	Area attempted to be protected.	Failures.	Actually protected.	Amount expended.	Total cost up to 30th June 1880.		
		Acres.	Rs. A. P.	Acres.	Acres.	Acres.	Rs. A. P.	Rs. A. P.		
Ajmere	Mohwa Madar Hill ...	2,812	...	2,812	94	2,718	27 0 0	27 0 0	...	
	Nag Pahar ...	2,660	15 0 0	2,660	...	2,660	16 0 0	31 0 0	1880	
	Taragarh Valleys ...	1,016	152 8 1	1,016	1	1,015	41 2 0	193 10 1	1874	
	Srinagar Bir ...	3,575	...	3,575	½	3,574½	38 8 6	38 8 6	1880	
	Rajausi ...	1,260	...	1,260	160	1,100	52 9 7	52 9 7	1880	
	Total ...	11,323	167 8 1	11,323	255½	11,067½	175 4 1	342 12 2	...	
Merwara	Chang ...	2,341	...	2,341	...	2,341	...	...	...	
	Hattun and Sheopura ...	1,920	...	1,920	...	1,920	...	...	...	
	Biliawas and Taragarh ...	3,172	394 1 6	3,172	..	3,172	53 10 6	447 12 0	1874	
	Todgarh and Barakhan ...	40,021	2,143 12 8	40,048	1,656	38,392	530 6 3	2,674 2 11	1874	
	Delwara and Chang Birs ...	235	...	235	...	235	...	...	...	
	Borwar and Kotri ...	3,923	...	3,923	2½	3,920½	...	...	...	
	Auspahar ...	1,466	112 14 0	1,466	...	1,466	76 1 6	188 15 6	1877	
	Total ...	53,078	2,650 12 2	53,105	1,658½	51,446½	660 2 3	3,310 14 5	...	
	Grand Total ...	64,401	2,818 4 3	64,428	1,914	62,514	835 6 4	3,653 10 7	...	

Charged in previous years ...	...	2,818 4 3
Ditto 1879-80 ...	...	484 14 1
Ditto 1880-81 ...	...	350 8 3
Total	...	3,653 10 7

Annual Form No. 48.—(*Prescribed.*)

FOREST DEPARTMENT, AJMERE-MERWARA.

Prosecutions for Breaches of Forest Rules, 1879-80.

Forest Division and Civil District.	Injury to forests by fire.		Unauthorized felling or appropriation of wood and minor forest produce.		Grazing without permission or in tracts in which grazing is prohibited.		Other offences.		Total.				Remarks.
									Prosecutions.		Convictions.		
	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Ajmere	2	3	82	184	5	10	...	...	89	197	83	172	
Merwara	...	...	17	49	9	42	1	2	27	93	25	84	
Total ...	2	3	99	233	14	52	1	2	116	290	108	256	

Annual Form No. 49.—(*Prescribed.*)

FOREST DEPARTMENT, AJMERE-MERWARA.

Summary of Revenue of the different Divisions, 1879-80.

Budget Heads.	Ajmere-Merwara Division.
REVENUE.	Rs. A. P.
I.—Timber and other produce removed from the forests by Government Agency:—	
(*a*) Timber	.....
(*b*) Firewood and charcoal	643 14 3
(*c*) Bamboos	.....
(*d*) Sandalwood	.....
(*e*) Grass and other minor produce	.....
II.—Timber and other produce removed from the forests by consumers or purchasers:—	
(*a*) Timber	.....
(*b*) Firewood and charcoal	15 14 0
(*c*) Bamboos	3 6 9
(*d*) Grazing and fodder grass	200 13 7
(*e*) Other minor produce	212 1 9
III.—Confiscated, drift and waif wood	.....
IV.—Revenue from forests not managed by Government:—	
(*a*) Duty on foreign timber and other forest produce ...	.....
(*b*) Revenue from shared and private forests	.....
V.—Miscellaneous:—	
(*a*) Fines and forfeitures	733 3 3
(*b*) Refunds	.....
(*c*) Other sources	51 7 6
Total Revenue ...	1,860 13 1
A.—CONSERVANCY AND WORKS.	
I.—Timber and other produce removed from the forests by Government Agency:—	
(*a*) Timber	.....
(*b*) Firewood and charcoal	266 4 9
(*c*) Bamboos	.....
(*d*) Sandalwood	.....
(*e*) Grass and other minor produce	.....
Carried over ...	266 4 9

Annual Form No. 49.—(*Prescribed.*)

FOREST DEPARTMENT, AJMERE-MERWARA.

Summary of Expenditure of the different Divisions, 1879-80.

Budget Heads.	Ajmere-Merwara Division. Rs. A. P.
Brought forward ...	266 4 9
II.—Timber and other produce removed from the forests by consumers or purchasers	4 9 9
III.—Confiscated, drift and waif wood	.....
IV.—Revenue from forests not managed by Government:—	
(*a*)—Duty on foreign timber and other forest produce ...	.....
(*b*) Revenue from shared and private forests	.....
V.—Rent of leased forests and payments to shareholders in forests managed by Government	.....
VI.—Live-stock, Stores, Tools and Plant:—	
(*a*) Purchase of cattle	96 0 0
(*b*) Feed and keep of cattle	39 3 10
(*c*) Stores, tools and plant	86 13 5
VII.—Communications and buildings:—	
(*a*) Roads and Bridges	458 9 3
(*b*) Buildings	666 7 9
(*c*) Other Works	.....
VIII.—Demarcation, improvement and extension of forests:—	
(*a*) Demarcation	.....
(*b*) Compensation for land and rights	.....
(*c*) Surveys and working-plans	.....
(*d*) Plantations	2,546 5 9
(*e*) Protection from fire	484 14 1
(*f*) Other works	624 6 9
Carried over ...	5,273 11 4

Annual Form No. 49.—(*Prescribed.*)

FOREST DEPARTMENT, AJMERE-MERWARA.

Summary of Expenditure of the different Divisions, 1879-80.

Budget Heads.	Ajmere-Merwara Division.
	Rs. A. P.
Brought forward ...	5,273 11 4
IX.—Miscellaneous :—	
(*a*) Refunds	.....
(*b*) Law charges	.....
(*c*) Other charges	6 10 11
Total A.—Conservancy and Works ...	5,280 6 3
B.—ESTABLISHMENTS.	
I.—Salaries :—	
(*a*) Conservators	
(*b*) Superior officers	2,400 0 0
(*c*) Subordinate Forest and Depôt Establishments ...	3,234 3 3
(*d*) Office establishments	1,498 0 0
(*e*) Deputation and special allowances	.....
II.—Travelling Allowances :—	
(*a*) Conservators	.....
(*b*) Superior officers	794 6 3
(*c*) Subordinate Forest and Depôt Establishments ...	.....
(*d*) Office establishments	163 9 8
III.—Contingencies :—	
(*a*) Stationary	42 10 0
(*b*) Carriage of tents and records	233 8 4
(*c*) Rents, rates and taxes	.....
(*d*) Pay of police guards	.....
(*e*) Sundries	70 10 10
(*f*) Official postage	32 [illegible] 0
Total B.—Establishments ...	8,469 10 4
Grand Total of Expenditure ..	13,750 0 7

Annual Form No. 59.—(*Prescribed.*)

FOREST DEPARTMENT, AJMERE-MERWARA.

Account Current for the year 1879-80.

Dr.

	Rs. A. P.	Rs. A. P.
To cash balance	...	
„ Revenue received in cash	1,860 13 1	
„ Revenue adjusted by book transfer, Public Works Department	...	
„ Remittance from State Treasuries	13,750 8 4	
„ Advances recoverable	1,613 13 2	
„ Deposits	3 6 3	
„ Suspense Account	0 2 9	17,228 11 7
TOTAL ...	...	17,228 11 7

Cr.

	Rs. A. P.	Rs. A. P.
By expenditure under A—Conservancy and Works	5,280 6 3	
Ditto B—Establishments ...	8,469 10 4	
„ Remittances to State Treasuries... ...	1,860 13 1	
Ditto adjusted by book transfer ...	...	
„ Advances recoverable	1,617 11 2	
„ Deposits repaid	...	
„ Suspense Account	0 2 9	17,228 11 7
TOTAL ...	...	17,228 11 7

Annual Form No. 51.—(*Prescribed.*)

Forest Department—Ajmere—Statement of outstandings and liabilities on account of Advances Recoverable, 1879-80.

Division.	Department Debtor.			Department Creditor.			Balance due		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstandings).	By Department (Liabilities).	
Ajmere Forest Division	.....	1,613 13 2	1,613 13 2	744 6 9	1,617 11 2	2,362 1 11	748 4 9	.....	
Total ...	.....	1,613 13 2	1,613 13 2	744 6 9	1,617 11 2	2,362 1 11	748 4 9	.....	

G. C. B. Press, Simla—No. 732 H., R. & A. D.—8-11-80.—260.

No. 708F., dated Simla, the 1st November 1880.

From—The HON'BLE C. GRANT, C.S., Offg. Secretary to the Government of India.
Home, Revenue and Agricultural Department,

To—The Surveyor General of India.

I AM directed to acknowledge the receipt of your letter No. 522 F., dated the 11th October, submitting, with your remarks, the Annual Report of the Superintendent of Forest Surveys for the year 1879-80.

2. The work of the Forest Surveys during the year under review was in the sub-montane Forests of Kumaun, in the forests near Ranikhet, and in the hills on the Tons river. Captain Bailey reports that the completion of the field work in Kumaun and Garhwal will probably take two more seasons. He should now consider, in communication with Conservators of Forests, what work should be taken in hand after the survey of the principal forests in the North-Western Provinces has been completed.

3. The outlay during the survey year ending 30th September, to which the Report relates, is reported to have been as follows :—

	Rs.
Kumaun and Garhwal	33,095
Jaunsar (Tons)	1,964
General	7,780
Total ...	42,839

The net outlay during the official year ending the 31st March 1880 amounted to Rs. 46,840.

4. Under the head "Miscellaneous work" a collection of forest maps of Bengal and Assam is adverted to. I am directed to suggest for your consideration, in communication with the Superintendent of Forest Surveys, whether it would not be a good plan to draw up and print a complete list of all maps available of the reserved forests in the different provinces. Lists of the reserved forests accompany the Annual Forest Reports, and Local Governments will be requested to direct Conservators of Forests to give Captain Bailey every assistance and information that may be needed in order to ascertain what maps are available for the different forests, whether the boundaries of the reserves have been entered on the maps, and, if so, whether they represent an actual survey of the boundaries.

5. Captain Bailey speaks in high terms of Mr. Reynolds' work, and His Honour the President in Council has noticed with much satisfaction that you have been able to give a favourable account of the progress made by the Forest Survey during the year. I am to request that you will convey to Mr. Kennessey the acknowledgments of the Government of India for the interest which he has taken in the Forest Surveys, and the assistance which he has rendered to Captain Bailey. The President in Council is much obliged to you for the efficient control which you continue to exercise over this important branch of the forest administration.

Circular No. 23 F.

Bengal.	British Burma.
North-Western Provinces and Oudh.	Coorg.
Punjab.	Ajmere.
Central Provinces.	Assam.
	Hyderabad.

COPY forwarded for information and guidance to the Governments and Administrations noted in the margin and to the Superintendent of Forest Surveys, with special reference to paragraph 4.

Copy also forwarded to the Foreign Department for communication to the Chief Commissioner of Mysore.

G. C. B. Press, Simla.—No. 761, H., N & A D—3 11-80.—250

REPORT OF THE SUPERINTENDENT OF FOREST SURVEYS FOR 1879-80.

No. 522F., dated the 11th October 1880.

From—MAJOR-GENERAL J. T. WALKER, C.B., R.E., Surveyor General of India,

To—The Secretary to the Government of India, Home, Revenue and Agricultural Department.

I HAVE the honour to submit the Annual Progress Report of the Forest Survey Department for the year terminating on the 30th ultimo, by Captain Bailey, R.E., Superintendent of Forest Surveys.

2. The several operations appear to be progressing very satisfactorily, both in the field and in recess quarters. I have recently inspected Captain Bailey's office at Dehra, and was well pleased with all I saw; the drawing of the final maps by Mr. Reynolds was very good, and the general organisation of the office and the arrangement of the records were very satisfactory.

3. The office derives considerable benefits from the circumstance that it is located in the same station as the Head Quarters Office of the Trigonometrical Survey; thus any map can be immediately photozincographed for publication whenever completed, and arrangements can be readily made for any modifications of procedure that may be necessary to meet special requirements, by personal communication with Mr. Hennessey, the officer in charge of the Trigonometrical Office, who has taken a great interest in the Forest Surveys, and done all in his power to co-operate with Captain Bailey. In this respect the Forest Surveys are really in a more favourable position than the Regular Surveys.

4. I notice that in calculating the mileage rate of the expenses of the Kumaun and Garhwal Survey, in paragraph 9 of his report, Captain Bailey takes into account the cost of the field work only, excluding that of the office work. If the latter were added, the mileage rate would be increased from Rs. 74 to Rs. 104 per square mile. In the operations of the Regular Survey it is usual to calculate the rate on the total expenditure, in office as well as in the field; but very possibly Captain Bailey has good reasons for departing from the usual custom in this respect.

Annual Progress Report of the Forest Survey Department from 1st October 1879 *to* 30*th September* 1880, *by* CAPTAIN F. BAILEY, R.E., *Superintendent of Forest Surveys, dated the 4th October* 1880.

Kumaun and Garhwál.

The camp under Mr. Reynolds, Deputy Superintendent, Forest Surveys, marched from Dehra on the 15th November and arrived at Chorgalia, in Eastern Kumaun, on the 3rd December. Work was at once commenced, and was continued until the 12th May, when the establishment, having suffered severely from fever, which was very prevalent in Eastern Kumaun, the march to head-quarters at Dehra was begun. During this period plane-tabling was carried on in the Iron Company's Grant, the Nandhaur Valley, Káli Kumaun, the Horai and Diáni Rau Forests, as well as in the country immediately to the east of Haldwáni. Sufficient of the country to the east of these localities was triangulated and traversed to provide for next season's work. The completion of the field work in Kumaun and Garhwál will probably take two more seasons.

Ránikhet.

2. On the 6th May, Mr. Chill left the main party for Ránikhet, where he continued the survey of the Government forests until the 20th June. He then returned to head-quarters. The survey of the Ránikhet forests is now completed with the exception of the entry of the pillars enclosing some

plots of village land within the forest boundaries. An unfortunate delay has occurred in getting these plots finally demarcated, and, until this is done, it will not be possible to complete the survey or to print the maps.

Tons Forests.

3. The triangulation of the Kotigádh forests was undertaken and completed in October by a native surveyor (Bábu Karuna Nidhan Mukerji), and in March Mr. Litchfield was sent from Kumaun, with a party of native surveyors, to commence the plane-tabling. He continued his work until driven in to head-quarters by the setting in of the rains.

Bareilly Forests.

4. It having been decided that the existing maps of the Bareilly forests will answer present requirements, the survey of them was not resumed.

Field Work.

* Not printed.

5. Appendix A gives a summary of the outturn of field work and computations for the season, and further details of the same are given in Appendix B,* which is in a form received from the Surveyor General's Office. The outturn of plane-tabling is 317·98 square miles on the scale of 4″=1 mile. The corresponding area for the previous year was 316 square miles. The outturn was again aided by the continuance of work in the higher hills after the great heat had set in in the Bhábar. The average monthly outturn for a party of one European and 3½ native surveyors was 10·6 square miles; the corresponding figures for the previous season having been 10·2 square miles for a party of 1 European and 4 Native surveyors. The result may, therefore, be considered as satisfactory. That the total area plane-tabled is less than that done during the previous season, is due partly to reduction of establishment and partly to the unhealthy nature of the country, which caused the men to knock up continually. By the time that the return march was commenced, most of the plane-tablers and many of the other hands were completely prostrated by fever. The march of Mr. Litchfield and his amins from Kumaun to the Tons forests necessarily occupied a considerable time. The field sheets are turned out in a manner which reflects credit on Mr. Reynolds. The area triangulated amounted to 237 square miles, within which 425 points were fixed. The distance traversed was 306 linear miles within an area of 270 square miles; the number of traverse stations being 3,783. Observations with the barometer were made at 2,091 places. The triangulation and traversing are almost sufficiently ahead of the plane-tabling to provide for the whole of next season's work. The area triangulated and traversed being 262 square miles, and the area triangulated only being 308 square miles. Forty-two masonry pillars were erected over trigonometrical stations at a cost of Rs. 6 each.

Computations.

6. The number of linear miles of traversing computed is 249, the average correction on the hypothenuse being 4·4 per 1,000; the average correction for the previous years was 5·3 per 1,000. The number of triangles worked is 207, and the number of points fixed thereby is 105. Eighty-eight Great Trigonometrical Survey stations were computed from latitude and longitude. The heights of 63 stations have been determined trigonometrically, and the heights of 759 points have been determined from observations with the aneroid barometer. The computing work has fallen somewhat into arrears, owing to the continued sickness of nearly all of the computers, two of whom will, it is feared, have to be discharged with a gratuity; but it is hoped that all the traversing will be computed before the party again takes the field. The computation of the triangulation is sufficiently advanced to provide for the requirements of next season's traversing.

Original drawings.

7. A summaty of the drawing and miscellaneous work done in the office will be found in Appendix C. Of the sheets of Kumaun and Garhwál reported as in progress last year, Nos. XVII, XXIII, XXXV, XXXIX, XL, XLI, LII and LIII have been printed; and the following are now in progress:— XII, XIII, XLIV, XLVI, XLVII, XLVIII, LIV, LV, LX, LXI, LXII, LXIII, LXIV and LXV. Sheet LV is in the press, sheets LIV and LXIV are nearly

ready for press. Six other sheets are completely drawn, and the drawing of the remaining five sheets is in progress. A map of the Darjeeling Forest Division (Bengal) was drawn on the scale of 1″=1 mile, and a map of the Bhira Sub-division (Oudh) was drawn on the scale of 4″=1 mile from the maps of the Oudh Revenue Survey.

Miscellaneous work.

8. Since Mr. Murray's transfer to the General Branch of the Department, there has been no one available for the continuation of the collection of maps of Bengal and Assam; but it is hoped that his services may be made available for this work during the winter months, and that it will then be completed. Forests were drawn by hand on 51 printed maps; 36 tracings were made for various forest and district officers; 1,163 printed maps of various kinds were colored; 248 printed maps were mounted in book form. The surveys of 10 candidates for the Forest Department were examined and reported on.

Summary of Expenditure.

9. A summary of expenditure from 1st October 1879 to 30th September 1880 will be found in Appendix D. The total cost of the field work for Kumaun and Garhwál, including triangulation and traversing in advance was Rs. 23,484. If the cost per mile be estimated on the area plane-tabled, the result gives Rs. 74 per square mile. The cost for the previous season was Rs. 77 per square mile. A part of the country surveyed was open and easy.

Officers of the Superior Staff.

Mr. W. H. Reynolds, Deputy Superintendent of Forest Surveys.

10. Mr. Reynolds held charge of all the field work, and since the commencement of the recess work he has superintended the drawing and computations. Great credit is due to him for the efficient manner in which he has conducted his duties. He left Dehra on the 16th November and returned from Kumaun on the 9th May.

Mr. E. F. Litchfield, Assistant Conservator of Forests.

Mr. Litchfield was employed on plane-tabling throughout the entire field season. He left Dehra on the 16th November and worked in Eastern Kumaun until the 16th April. He then went to the Tons and surveyed the forests of the Kotigádh and those of Bámsu and Surars. He returned to Dehra on the 10th July. He worked steadily and well throughout the season.

Forest Surveyors.

Mr. G. P. Chill.

11. Mr. Chill left Dehra for Kumaun on the 3rd December and returned on the 23rd June. He was employed up to the 7th May on plane-tabling in Eastern Kumaun; he then proceeded to Ránikhet, where he continued work until his return to Dehra. He has worked in a satisfactory manner.

Mr. T. S. Marten.

Mr. T. S. Marten was employed throughout the field season on plane-table work. He left Dehra on the 17th November and returned on the 9th May. On the 10th April Mr. Marten was attacked by fever, and was unable to resume his field work again after that date. Some of his work was, therefore, through no fault of his own, brought in incomplete.

Mr. E. V. Fitzgerald.

Mr. Fitzgerald was employed on triangulation in Garhwál from the 29th November to the middle of February; he then returned to Dehra. He left the department on the 31st March on account of reduction of establishment.

Mr. J. Marten.

Mr. J. Marten left Dehra on the 17th November and returned to recess quarters on the 5th June. He was employed throughout the field season on plane-tabling the country immediately to the east of Haldwáni. He suffered from ill health almost throughout the field season, but he continued to work. He is steady and deserving.

Native Establishment.

12. The native establishment has worked well. Some of the native surveyors were thrown out of employment owing to the reduction of establishment, but appointments were secured for most of them elsewhere.

The average strength of the native establishment during the field season was as follows:—

Triangulation	...	...	... 1
Plotting boards	...	...	... 1
Traversing	...	...	... 2½
Computing	...	...	... 2
Plane-tabling	...	...	... 18
Barometer	...	...	... 1
		Total in field	... 25½
At head-quarters	...	...	... 7½
		Total	... 33

The following documents accompany the report:—

I.—*Index chart* illustrating the progress of the work.

II.—*Appendix A.* Summary of outturn of Field work and computations.

III.—*Appendix B.** Further details regarding the above.

IV.—*Appendix C.* Summary of outturn of drawing and miscellaneous work.

V.—*Appendix D.* Summary of expenditure from 1st October 1879 to 30th September 1880, showing the amounts expended on field and office work.

VI.—Annual form 49.* Summary of revenue and expenditure for the past financial year.

VII.—Annual form 51.* Statement of outstandings and liabilities at the end of the past financial year.

APPENDIX A.

Summary of the Outturn of Field-work and computations by the Forest Survey Department from 1st October 1879 to 30th September 1880.

No.	Kumaun and Garhwál and Jaunsar Survey.	Amount.	REMARKS.
1	Area plane-tabled on the scale of '4"=1 Mile—		
	(a) Kumaun and Garhwál 297 square miles	318	Square miles.
	(b) Tons 21 "		
2	Area triangulated	237	"
3	Number of points fixed	425	
4	Area traversed	270	"
5	Number of linear miles traversed	306	
6	Number of traverse stations	3,783	
7	Number of linear miles of traversing computed ...	249	Average correction per 1,000 = 4·4.
8	Number of triangles worked—		
	(a) Kumaun and Garhwál ... 108	207	
	(b) Tons 99		
9	Number of points fixed thereby	105	
10	Number of Great Trigonometrical Survey stations computed	88	
11	Number of heights worked trigonometrically ...	126	
12	Number of points, of which the heights were determined thereby	63	
13	Number of barometrical observations determined thereby	2,091	
14	Number of barometrical observations computed ...	1,498	
15	Number of points, the heights of which were determined thereby	759	

Note.—For the work of the coming field season there are 262 square miles triangulated and traversed in advance, and 308 square miles triangulated only.

* Not printed.

APPENDIX C.

Summary of outturn of drawing and miscellaneous work by the Forest Survey Department from 1st October 1879 to 30th September 1880.

	ORIGINAL DRAWINGS IN PROGRESS.	
1	Kumaun and Garhwál sheets XII, XIII, XLIV, XLVI, XLVII, XLVIII, LIV, LV, LX, LXI, LXII, LXIII, LXIV, and LXV ...	Sheets. 14
2	Sketch map of Darjeeling Division, Bengal. Scale 1″=1 mile ...	1
3	Portion of Bhira Sub-Division, Oudh, enlarged from the Oudh Revenue Survey map to 4″=1 mile	1
	MISCELLANEOUS WORK.	
	Forests drawn on printed maps.	
4	Punassa forest, Central Provinces, entered on Atlas Sheet No. 53 ...	1
5	Forests entered on maps of Bengal	31
6	Do. do. of Assam	7
7	Do. of Bareilly District, sheets 1 to 8	8
8	Do. Maps of Berar	5
	Tracings made.	
9	Tracings made for various Forest and District officers	36
	Maps colored.	
10	Printed maps of various kinds colored	1,163
	Maps mounted.	
11	Printed maps mounted in book form	248
	Surveys of candidates examined.	
12	Surveys of candidates for the Forest Department examined and reported on	10

APPENDIX D.

Summary of expenditure from 1st October 1879 to 30th September 1880, showing the amounts expended on Field and Office-work.

No.	Months.	Kumaun and Garhwál.		Jaunsar.		General.	Total.	REMARKS.
		Office.	Field.	Office.	Field.			
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1	October 1879 ...	1,844	...	4	...	1,480	3,328	
2	November ,, ...	1,757	108	...	174	804	2,843	
3	December ,, ...	1,035	2,185	...	52	460	3,732	
4	January 1880 ...	101	3,810	...	5	398	4,314	
5	February ,, ...	74	273	...	...	751	1,098	
6	March ,, ...	74	7,201	...	...	530	7,805	
7	April ,, ...	78	3,562	...	22	400	4,062	
8	May ,, ...	80	3,525	...	284	395	4,284	
9	June ,, ...	610	1,778	...	586	370	3,344	
10	July ,, ...	1,242	1,010	160	481	759	3,652	
11	August ,, ...	1,299	32	14	129	755	2,229	
12	September ,, ...	1,417	...	53	...	678	2,148	
	Total ...	9,611	23,484	231	1,736	7,780	42,839	

G. C. B. Press, Simla.—No. 812 H., R. & A. B.—10-11-80.—250.

PROGRESS REPORT

OF

FOREST ADMINISTRATION

IN

AJMERE,

AND

REPORT ON THE OPERATIONS OF THE FOREST SURVEY,

FOR

1880-81,

WITH THE ORDERS OF THE GOVERNMENT OF INDIA.

1881.

No. 919F., dated Simla, the 7th October 1881.

From—A. MACKENZIE, Esq., C.S., Offg. Secretary to the Government of India, Home Department,

To—The Chief Commissioner of Ajmere.

I AM directed to acknowledge the receipt of your Secretary's letter No. 2114S., dated the 10th August last, submitting, with a copy of your orders thereon, the Report of Forest Administration in Ajmere and Merwara for the year 1880-81; and in reply to communicate the following observations by the Government of India.

2. It is satisfactory to notice that the area of the State forests taken up under the Regulation of 1874 has been extended during the year by 13,447 acres. Of this addition 12,203 acres lie in the extreme southern portion of Merwara, where the extension of the reserves had been strongly recommended by the Inspector General of Forests, and 1,244 acres in the catchment area of the Danta Tank near Nusseerabad. The total area of State forests in the province now stands therefore at 77,875 acres.

A separate communication* has recently been addressed to you regarding the desirability of extending the areas reserved for improvement in the hot, dry hills of Ajmere, and of securing the complete protection of the catchment basins of the larger tanks.

* No. 746F., dated the 22nd August 1881.

3. The fencing of the reserves and their efficient protection are matters of the first importance. The length of fence existing is not stated in the report; but it is explained, in paragraph 24, that, with a small addition of 5,813 feet, which was made during 1879-80, the total length has remained the same during the year. The length of fencing along the boundaries of the new Dewair and Danta Reserves should be given, and the entire length of fencing completed should be correctly stated in the report for 1881-82.

4. It is noticed that as many as nine fires occurred in the forest during the year, those in the tracts of Merwara, and especially in Todgarh, being the most extensive and destructive. This is to be regretted; but the Governor General in Council accepts your assurance that the Commissioner is fully alive to the importance of vigilance and sustained effort in the matter of fire protection, and that steps have been taken to widen and improve the fire-traces.

5. The number of prosecutions for breaches of Forest rules again shows a diminution. The decrease in offences in the present year seems from the table to be attributable to a falling off in the number of cases of illegal cutting of firewood, and this is ascribed by the Assistant Commissioner to the more careful supervision exercised, and to the fact that almost all the dry wood was sold. The number of cases of prosecution for cattle trespass remained the same, but the number of cattle impounded was 614 in excess of that reported last year. This is, however, entirely accounted for by the additional area taken up as State forest. In the older tracts there was a large decrease in the number of cattle impounded, which is satisfactory evidence that the people now take more care to keep their cattle out of the reserves.

6. Plantation operations during the year were limited, owing to the unfavourable rainy season, and the outlay under this head was only Rs. 1,223. The total amount expended on this account since the beginning of Forest Administration in the province has amounted to Rs. 34,629; and there is every reason to believe that the money has been well laid out.

7. In paragraph 44 of the Report it is said that the plants at the Beawar nursery do not flourish, and that the seeds do not freely germinate owing to the water being brackish. Should this be the case, the nursery might perhaps with advantage be removed to a more favourable site, as suggested by the Forest Ranger.

Experiments in coppicing are reported, but, unless the particular species is mentioned, it is not possible to estimate the value of the results attained.

8. The following figures shew the financial results of the year, which were very similar to those of 1879-80 :—

		Rs.	Rs.
Receipts	.. ..		1,124
Charges	A. Conservancy and Works ...	4,755	
	B. Establishments	7,668	
			12,423
	Deficit		11,299

There was a smaller income from fines and from the sale of firewood; but this was more than counterbalanced by savings in expenditure under "Communications and Buildings" (A. VII), "Plantations" (A. VIII, *d*) and "B. Establishments."

It cannot of course be expected, for some time to come, that these dry, hilly regions, which have only been under Forest Conservancy during the last few years, should yield a sufficient outlay to cover their working expenses. On the other hand, the prospective benefit to the country from the operations now in progress is very great, and these forests are already a source of convenience to the people, who obtain from them *gratis* large supplies of fodder. This form of return cannot be shewn as a cash income, but it is nevertheless valuable. The Governor General in Council is glad to notice that endeavours are being made to render the reserves more and more useful to the people in this respect.

9. In conclusion, I am to invite attention to Form No. 46, "Area of plantations," appended to the report, in which the figures of the opening column, shewing the total cost on the 1st April 1880, do not agree with the closing figures in the previous report. The totals are as follows :—

	1879-80. On 31st March 1880.			1880-81. On 1st April 1880.		
	Rs.	A.	P.	Rs.	A.	P.
Out of the area taken up under the Regulation ...	20,310	8	2	30,733	11	9
Tracts not taken up under the Regulation ...	845	11	0	2,672	11	2
Total plantations ...	21,156	3	2	33,406	6	11
Nurseries ...	9,304	2	4	500	0	0
Grand Total ...	30,460	5	6	33,906	6	11

The discrepancy is not explained, but is probably due to more correct figures having been received after submission of the report for 1879-80. I am to suggest that all differences between the opening balance of one year and the closing balance of the year previous may invariably be accounted for in the annual report.

No. 920F.

COPY of the above, with copy of the report, forwarded to the Government of the North-Western Provinces and Oudh, for communication to the Conservator of Forests of the School Circle.

No. 921F.

COPY of the above, with a copy of the report, forwarded to the Foreign Department for information.

Original papers returned.

G. C. P. Press Simla,—No. 581 H. D.—10-10-81.—310.

AJMERE FOREST REPORT FOR 1880-81.

No. 2113S., dated the 10th August 1881.

From—MAJOR J. P. STEEL, R.E., Secretary to Agent, Governor-General, and Chief Commissioner, Ajmere,

To—The Secretary to the Government of India, Home Department.

I AM directed by the Chief Commissioner to submit the annual report of Forest Administration for 1880-81, together with his review thereof.

Extract from the Proceedings of the Chief Commissioner of Ajmere in the Public Works Department,—(No. 2113S., dated the 10th August 1881).

Read—

The Administration Report of the Ajmere and Merwara Forests for the year 1880-81.

RESOLUTION.—The area of reserved forests was increased during the year by 13,447 acres, of which 12,203 acres lay in the extreme southern portion of Merwara in the Abu direction, and 1,244 acres in the catchment of the Danta tank near Nusseerabad. The total area stood at the close of the year at 77,875 acres, or 121·6 square miles. Of this area 382 acres have been under plantation, though not yet fully stocked.

2. There was, besides the above total area of reserved forests, a small area of 35 acres, not taken up under the Forest Regulation of 1874, on which nursery and plantation operations have been carried out.

3. The demarcation and marking of boundaries was all completed last year. The expenditure on fencing amounted this year to only Rs. 46-4-3, which was all on repairs. The total length of fences and of unfenced boundaries has not been stated. This information having been required by the Government of India, in their orders on the last report, the Commissioner should have taken timely steps to obtain it, and this should now be done as early as practicable.

4. This year proved an extremely unfavourable one for fire protection. There were nine conflagrations, the more extensive and destructive ones being all in the Merwara tracts, and especially in the Todgarh, the largest of them. Altogether an area of 973 acres was affected. This, though large compared with the results of the previous years, is not more than 1½ per cent. of the total area. The Commissioner is fully alive to the importance of fire protection, and endeavours will continue to increase the protection as far as practicable. During the year, the fire lines have been both improved and increased, and the establishment was also strengthened.

5. The number of Forest offences has again diminished, notwithstanding the addition to the area. This is no doubt the effect of time, as will be seen from the details given in paragraph 11 of the Commissioner's report regarding cattle trespasses in the several tracts. The cattle impounded in the Rajaosi tract taken up five years ago numbered 14, while in that of Danta, very nearly equal in area and acquired last year, the number was 235. So also, though the areas of the Todgarh and Dewair tracts are relatively 3⅓ to 1, the number of cattle impounded thereon was 1 to 1½ respectively. It may be inferred from this that at the commencement the villagers must find considerable difficulty in keeping their cattle off the grazing ground to which they had been accustomed for years, especially when the tract is not fully fenced.

6. The year was far from favourable for plantation work, and the results secured were not therefore satisfactory.

7. The results of the small felling undertaken this year in the Todgarh tract have not been favourably spoken of. The information given in the report is not sufficient to enable a judgment to be formed about this important matter. There exists in both Ajmere and Beawar a very large demand for fuel and grass.

Firewood is now sold at Ajmere at 1¼ maunds per rupee. It is not much cheaper at Nusseerabad, and if wood be available for felling, a good market will not be wanting. The subject will no doubt receive due attention.

8. The financial results of the year's work were as follow:—

	Rs.	A.	P.
Receipts	1,124	4	9
Expenditure	12,423	1	5
Deficit ...	11,298	12	8
Deficit for 1879-80 ...	11,889	3	6

The revenue has decreased by Rs. 736-8-4 compared with that of the last year. This falling off was, it is explained, due to less charcoal and wood having been sold this year.

9. The possibility of any return for the expenditure of Rs. 34,629-8-10 incurred on plantations is still remote, and at present fines form the main source of income.

10. The sale proceeds of grass of certain tracts were hitherto credited to the District Nazul Fund. This income will be in future brought to the credit of the Forest revenue, and the receipts may be expected to improve by about Rs. 600 to Rs. 1,000 per annum.

11. The reserves have been inspected by Messrs. Moir and Fernandez, deputed by the Conservator of Forests, School Circle, North-Western Provinces. Their report, with the Conservator and the Commissioner's opinion thereon, will be awaited.

12. On the whole, the Officiating Chief Commissioner observes with satisfaction that Forest conservancy is making steady progress in Ajmere and Merwara, where this important branch of administration was so long neglected. Colonel Walter believes that if the Commissioner and his assistants continue to take the same intelligent interest in this branch of their duties, the example cannot fail to have some good effect on the neighbouring proprietors and even on the surrounding States.

ORDER.—Ordered, that a copy of this Resolution, together with the Commissioner and Conservator's report in original, be submitted to the Government of India under cover of a separate letter.

Ordered also, that this Resolution be communicated to the Commissioner and Conservator, Ajmere and Merwara.

No. 54F., dated the 23rd July 1881.

From—L. S. SAUNDERS, Esq., Commissioner and Conservator of Forests, Ajmere and Merwara,

To—The Secretary to the Chief Commissioner, Ajmere, in the Public Works Dept.

I HAVE the honor to submit the annual progress report on the administration and working of the forests in Ajmere and Merwara for the year 1880-81.

RESERVED FOREST TRACTS.

Area.

2. During the year under review two tracts, *viz.*, Dewair and Danta, comprising an area of 12,203 and 1,244 acres respectively, were added to the tracts reported upon last year. The area at the close of the year stood as follow:—

		Acres.
Ajmere	Mohwa and Madar Hill	2,812
	Nagpahar	2,660
	Taragarh Valleys	1,016
	Srinagar and Bir	3,575
	Rajaosi	1,260
	Danta	1,244
	Total	12,567
Merwara	Chang	2,341
	Hattun and Sheopura	1,920
	Biliawas and Taragarh	3,172
	Todgarh and Barakhan	40,048
	Dilwara and Chang Birs	235
	Borwat and Kotra	3,923
	Auspahar	1,466
	Dewair	12,203
	Total	65,308
	Grand Total	77,875

3. The two tracts newly taken up were demarcated in 1879-80, as mentioned in paragraph 2 of the report for 1879-80, but notifications under the Forest Regulation were only issued during the year.

The Dewair tract is situated at the extreme southern point of our district, in the Abu direction.

The Danta reserve is situated between Ajmere and Nussecrabad.

Protection and Improvement.

Establishment.

4. In accordance with the proposals contained in Dr. Brandis' "Suggestions," dated the 1st November 1879, the establishment was reorganised and made permanent from the 1st November 1880, under the sanction of the Government of India, communicated in letter No. 177F., dated the 17th February 1881. The strength and cost, as compared with the preceding year, is shown below:—

		Number.		Actual cost.	
		1879-80.	At close of 1880-81.	1879-80.	1880-81.
				Rs.	Rs.
Sub-Assistant Conservator—Supervising ...		1	*...	2,400	1,797
Clerk	Office	1	1	1,498	1,415
Munshi	Office	1	1		
Chaprasis	Office	3	2		
Forest Ranger	Forestry	...	1	3,234	3,526
Foresters	Forestry	5	6		
Forest guards	Forestry	32	31		
Total ...		43	42	7,132	6,738

* For 8¼ months only.

5. This shews a decrease of Rs. 394, which is principally due to the substitution of a Forest Ranger for a Sub-Assistant Conservator.

6. Mahomed Anwar Khan, the late Sub-Assistant Conservator, obtained one year's furlough, with effect from the 21st December last, and his pay was reduced from Rs. 200 to Rs. 150 by order of the Government of India, from the 1st October 1880.

7. Ranger Sahib Roy was, on the recommendation of Captain Bailey, transferred from the School Circle on Rs. 70 per mensem, and put in charge of the Merwara Forests from the 21st December 1880.

Breaches of Forest Rules.

8. The different offences compared with last year are shown in the following statement:—

	1879-80.	1880-81.	Increase.	Decrease.
Injury to forests by fire ...	2	2	...	...
Unauthorised felling or appropriation of wood and minor produce.	99	63	...	36
Grazing without permission ...	14	13	...	1
Other offences	1	2	1	...
Total	116	8	...	36

9. In Ajmere considerable decrease is observed under "unauthorised felling," &c. This the Assistant Commissioner reports is due to more careful supervision, and also, as the dry wood was sold, there was little left to be stolen.

10. The number of persons prosecuted in 80 cases was 285, against 290 persons and 116 cases reported last year. In 60 cases involving 122 persons convictions were obtained.

11. The following table shows the number of cattle impounded, with the receipts from the Pound Fund which have been credited to the Forest Department for the year 1880-81 :—

	Name of tracts.	Number of cattle impounded.		Half the income from fines on cattle impounded.					
		1879-80.	1880-81.	1879-80.			1880-81.		
		No.	No.	Rs.	A.	P.	Rs.	A.	P.
Ajmere	Mohwa Madar Hill	425	354	33	8	0	31	0	6
	Nagpahar	446	224	48	2	6	38	11	0
	Taragarh Valleys	150	330	18	8	0	28	0	0
	Srinagar Bir	510	548	43	10	6	102	8	0
	Rajaosi	85	14	10	7	0	1	11	0
	Danta	...	235	...			12	1	6
	Total ...	1,616	1,705	154	4	0	214	0	0
Merwara	Chang	233	203	36	0	0	41	8	0
	Hattun	93	10	7	7	6	1	4	0
	Biliawas	92	106	5	13	0	12	3	6
	Todgarh	1,860	1,321	147	0	0	129	0	0
	Beawar Nursery	52	37	5	5	0	4	3	0
	Dilwara and Chang Birs ...	156	288	18	15	6	23	9	0
	Borwar and Kotra	159	149	15	6	6	13	2	6
	Anspahar	4	148	0	8	0	4	10	0
	Dewair	...	912	...			54	4	6
	Total ...	2,649	3,174	236	7	6*	283	12	6
	Grand Total ...	4,265	4,879	390	11	6	497	12	6

12. The number of cattle impounded in all the reserves was 614 in excess of last year, but the two new tracts account for 1,147 extra cattle. Consequently there were in the old tracts actually a decrease of 533 impounded cattle, and this notwithstanding that grass was deficient owing to the scanty rainfall. The income from this source rose by Rs. 107-1-0.

Fire protection.

13. The cost of fire protection during the last two years ending the 30th June 1881 was—

	Name of tracts.	1879-80.			1880-81.		
		Rs.	A.	P.	Rs.	A.	P.
Ajmere	Mohwa and Madar Hill	27	0	0	28	11	6
	Nagpahar	16	0	0	41	14	0
	Taragarh Valleys	41	2	0	52	15	3
	Srinagar	38	8	6	26	0	0
	Rajaosi	52	9	7	34	15	0
	Total ...	175	4	1	184	7	9
Merwara	Chang	...			15	13	6
	Biliawas and Taragarh	53	10	6	37	5	0
	Todgarh and Barakhan	530	6	3	655	7	4
	Anspahar	76	1	6	72	7	0
	Dewair	...			173	14	0
	Total ...	660	2	3	954	14	10
	Grand Total ...	835	6	4	1,139	6	7

Note.—Rs. 244-6 shown in last year's report as being due from the Merwara Pounds was entered by mistake of the Sub-Assistant Conservator; it should have been Rs. 236-7-6.

14. The sum of Rs. 184-7-9 spent in Ajmere includes—

1 Nagpahar.
1 Taragarh Valleys.
1 Srinagar.
1 Rajaosi.

	Rs.	A.	P
Pay of 4* extra fire-watchers entertained during dry season	90	1	0
Rewards to the villagers who rendered assistance in extinguishing fires	51	11	6
Constructing fire-lines	42	11	3
Total ...	184	7	9

15. The sum of Rs. 954-14-10 expended in Merwara includes Rs 235-1-6 on account of burning fire-lines in the preceding year, spent irregularly by Sub-Assistant Conservator Mahomed Anwar Khan without obtaining previous sanction.

16. Rupees 70-13-4 were spent on account of pay of six extra fire-watchers entertained in Todgarh, leaving Rs. 619 as the actual cost of burning and clearing fire-lines in the year under report.

17. The number and length of fire-lines constructed in each tract, together with the cost thereof, is as follow :—

Name of tract.		Number of fire-lines constructed.	Length of fire-lines. Miles.	Length of fire-lines. Feet.	Cost. Rs.	A.	P.
Ajmere	Taragarh Valleys ...	2	...	5,280	9	14	3
	Nagpahar	2	2	2,250	19	14	0
	Rajaosi	2	6	2,620	12	15	0
	Total ...	6	8	4,870	42	11	3
Merwara	Chang	1	2	440	15	13	6
	Anspahar	3	7	4,165	58	12	0
	Biliawas	2	5	1,156	34	6	0
	Todgarh	8	52	1,034	364	7	6
	Dewair	3	16	70	173	11	0
	Total ...	17	83	1,885	649	0	0
Grand Total ...		23	93	1,475	691	11	3

18. In Ajmere the fire-lines burnt were 100 feet wide, and the average rate per mile fell at Rs. 4-4-9. The fire-lines in the Nagpahar and Rajaosi tracts were constructed for the first time.

19. In Merwara the breadth of the fire-lines constructed this year was increased from 40 feet to 150 feet, the cross lines being burnt only 100 feet wide.

20. The cost of burning and clearing these fire-lines falls at Rs. 7-13-0 per mile. Messrs. Moir and Fernandez estimated the cost of constructing fire-lines at Rs. 5 and Rs. 3 per mile, in paragraph 64 of their late inspection report and it does not appear that the late Sub-Assistant Conservator studied economy as much as he should have done.

21. Nine conflagrations occurred during the year; details are given below :—

Date on which fire occurred.	Name of tract.	Total area.	Area affected by fire.	Percentage of area affected to total area.	Number of Forest guards.	Number of Fire-watchers.	Area per Forest guard and watcher.
		Acres.	Acres.	Acres.	No.	No.	Acres.
3rd October 1880 ..	Rajaosi	...	·3	·02	2	1	420
12th February 1881 .		1,260	·03	·002			
16th November 1880..	Pushkarbagh (Nagpahar) ...	2,260	2	·07	2	1	886·6
17th " " ...	Mohwa Bir	2,812	...	...	2	...	1,406
11th " " ...	Todgarh		54	·13	6	6	3,337·4
13th April 1881 ...		40,048	107	·26			
28th " " ...			520	1·29			
2nd February 1881 ...	Dewair	12,203	173	1·41	2	...	6,101·5
7th March 1881 ...	Borwar and Kotra ..	3,923	117	2·98	3	...	1,307·6

22. The details of these fires have been, or will be, reported upon in due course. The fires were principally caused by negligence of passers-by. In one case the fire came across our border from Marwar.

23. The fire-lines have been doubtless a great safeguard, and now that they have been further widened, they will prove still more useful. We are fully alive to the fact that each year fires become more destructive as the forests become thicker and thicker, and greater precautions become annually more necessary.

Fencing and other works.

24. The length of fencing was given in detail in paragraph 19 of our report for 1878-79. Since then, 5,813 feet of fencing has been constructed. The exact length of the boundaries of the Danta and Dewair tracts is not known, but in next year's report an amended account of fencing shall be given. There was no expenditure for fencing this year in Ajmere, and only Rs. 46-4-3 were spent in Merwara in repairing some of the dry stone walling in Todgarh and the cactus fencing in the Dilwara and Chang Birs.

25. The bunds constructed in March 1880 in the Taragarh Valleys and Rajaosi tract have not given good results as yet, probably owing to the scanty rainfall. The work is, however, of a satisfactory nature, as it has caused the deposit of a large quantity of silt.

Inspection paths.

26. The inspection paths in Ajmere were in passable order and needed no repairs.

27. In Merwara Rs. 50-4 were spent in constructing a path 2 miles long in the Todgarh tract along the fire-line. The full length will be completed when funds are available.

Buildings.

28 No buildings were constructed, and only Rs. 36-4-1 was spent on petty repairs to buildings in the Ajmere forests.

Plantations.

29. The following statement gives the total expenditure on plantations from the commencement, up to the close of the year 1880-81, the proportionate charges of nursery expenses having been distributed among the various tracts :—

	Name of Plantation.	Expenditure up to the 31st March 1880 — Actual expenditure.			Expenditure up to the 31st March 1880 — Proportionate charges of nursery expenses.			Expenditure during 1880-81. — Actual expenditure.			Expenditure during 1880-81. — Proportionate charges of nursery expenses.			Total.		
		Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Ajmere.	Mohwa and Madar Hill ...	5,241	2	3	2,491	2	10	104	7	10	7	9	2	7,844	6	1
	Nagpahar .	5,609	1	2	2,723	8	8	135	0	0	7	0	4	8,474	10	2
	Taragarh Valleys	5,679	1	3	2,758	1	10	302	4	0	93	3	9	8,832	10	10
	Srinagar Bir ..	604	9	2	210	10	4	84	4	2	7	8	3	906	15	11
	Shikast Masjid ..	845	11	0	327	0	2	64	1	8		...		1,236	12	10
	Total ...	17,979	8	10	8,510	7	10	690	1	8	115	5	6	27,295	7	10
Merwara.	Chang ...	820	13	7	641	8	11	55	11	7	13	11	7	1,531	13	8
	Hatttun and Shoopura ...	792	11	5	605	6	4	57	5	11		...		1,455	7	8
	Todgarh ...	493	12	10	408	15	1	56	8	5		...		959	4	4
	Biliawas ...	552	9	6	372	3	4	39	0	2		...		963	13	0
	Dilwara and Chang Birs .	516	11	0	211	10	3	73	7	5	28	2	1	829	14	9
	Parade plantation		...		1,500	0	0	80	0	0	13	11	7	1,593	11	7
	Total ...	3,176	10	4	3,739	11	11	362	1	6	55	9	3	7,334	1	0
		21,156	3	2	12,250	3	9	1,052	3	2	170	14	9			
	Grand Total ...	33,406 6 11						1,223 1 11						34,629	8	10

30. The actual expenditure during the year under review has been Rs. 1,052-3-2, a decrease of Rs. 344-10-5, Rs. 1,396-13-7 having been spent during 1,879-80. Planting operations were limited owing to bad and insufficient rains.

31. Of the 5,868 trees still living, reported last year, 480 have died during the hot season. 2,613 trees were planted out in the rains, of which 912 died in the cold season, leaving 7,089* under maintenance.

Ajmere ...	3,946
Merwara ...	3,143
	7,089

32. The area covered by plantations is 396 acres, as detailed in Form No. 46. The area of the Beawar Parade plantation has now been shown separately from that of the Beawar nursery, and included in plantations. Out of 24 acres of the Parade plantation, 16 acres were given to the Rev. W. Shoolbred, leaving only 8 acres in charge of the department.

33. The Carob trees are doing well and have made fair progress; they vary from 13 feet to 14 feet in height.

34. In Ajmere 7 plants of Pithecolobium Saman, 25 of Mesquit bean and 32 of Bamboo were transplanted from the nursery into the several tracts.

35. In Merwara 22 plants of Mesquit bean were planted out in the Dilwara and Chang Birs.

36. The cost of the nursery amounted in Ajmere to Rs. 1,893-9-5, and in Merwara to Rs. 240-15-8.

37. The old nursery at Ajmere was situated so far from the station that it could not be efficiently inspected. Some land has now been purchased for Rs. 1,662-9-0, in a more convenient position.

38. Four thousand five hundred and fifty-three trees have been sent out from the Ajmere nursery: 2,285 were planted in Government tracts, and 396 were given *gratis* to applicants and sold; the rest were planted along the roads.

39. One thousand four hundred and twenty-two trees were given out from the Beawar nursery: 328 have been planted in Government plantations, and 32 were given *gratis* to applicants; the rest have been planted out on the roads.

40. Several sorts of seeds were sown during last rains, which produced 21,957 seedlings. Out of this 9,515 died in the cold weather, leaving 6,018 plants fit for transplanting and 6,424 still unfit.

41. Five chittacks of *Pinus longifolia* seeds produced 150 seedlings, out of which 99 died, leaving 51 alive.

42. From two chittacks of *Dodonæa viscosa* seeds sown in July last 150 seedlings were obtained, but only 40 survived.

43. *Carissa diffusa* and *Cupressus torulosa* were sown, but did not germinate.

44. The water in the Beawar nursery is said to be brackish; the plants consequently do not flourish well, and seeds do not germinate properly. The Forest Ranger suggests the transfer of the nursery to the Dilwára Bir, which proposal is deserving of consideration.'

Sowing Operations.

45. The actual cost of sowing operations in Ajmere amounted to Rs. 23-4-3, and in Merwara to Rs. 20-1-10.

46. Seeds of various sorts were thrown broadcast, and also sown by the plough and small hand spades during last rains, many of which are reported to have germinated fairly well.

47. Out of the 82 trees cut experimentally, to see their coppicing powers in the Dadalia jungle of the Todgarh tract in December 1878, 70 trees are reported to have coppiced well, varying from 4 to 5 feet in height.

48. Of the 80 trees cut in July 1879 in Bagri and Chipi Devi 75 coppiced, and now vary in size from 2 to 3 feet. A few of them have been damaged by animals.

Felling Operations.

49. An experimental felling of Dhaukra in a patch measuring one acre was made this year in the Todgarh tract at a cost of Rs. 10-5-6.

50. Messrs. Moir and Fernandez selected an area of about 600 acres west of Bagri, this area being naturally divided into three compartments, each having an independent export line, which will enable them to be cut simultaneously or one after another as necessity may require. Rs. 13-4 were realised from sale proceeds of ballis and dandas, &c., obtained in felling trees.

51. The firewood still remains unsold, valued at Rs. 33-6. The net profit of felling in one acre can only thus be estimated at about Rs. 36-5-6, and it does not therefore appear to be worth while to continue felling at present.

Requirements of the Zamindars.

52. Two thousand one hundred and ten dandas, ballis and dry trees were given to the zamindars from the Todgarh tract, and 140 from the Chang tract, for household and agricultural requirements.

53. Grass was freely cut in the tracts of Ajmere and Merwara by the villagers, from December to the end of May.

Financial Results.

54. The receipts and expenditure as compared with the preceding year stand as follow:—

Main heads.		1879-80.			1880-81.		
		Rs.	A.	P.	Rs.	A.	P.
Receipts	... ...	1,860	13	1	1,124	4	9
Expenditure	A.—Conservancy and Works	5,280	6	3	4,755	6	3
	B.—Establishments	8,169	10	4	7,667	11	2
	Total expenditure . .	13,750	0	7	12,423	1	5
Deficit ...	... ...	11,889	3	6	11,298	12	8

55. The receipts show a decrease of Rs. 736-8-4 on the previous year, especially under the heads I(*b*)—"Firewood and Charcoal" and V(*a*)—"Fines and Forfeitures"

Last year the sale of firewood and charcoal supplied for the Viceroy's camp brought Rs. 644. This was an exceptional item of receipt. The fines inflicted have also been less this year.

56. The expenditure also shows a decrease, *viz.*, of Rs. 1,326-15-2, which is due to savings under heads "Communications," "Plantations," and "Establishments," showing that general economy has been exercised.

57. In future the revenue will be considerably increased by the income on account of grass from the Nagpahar and Mohwa Bir tracts, which hitherto had been credited to the Nazul Fund, but has now been ordered to be credited to Forest revenues.

58. A forecast amounting to Rs. 84,000, for the five years ending 31st March 1885, prepared on the basis of Dr. Brandis' proposal contained in paragraph 138 of his suggestions on the Ajmere and Merwara Forest administration, was submitted in June last, and has been approved by the Local Government (*vide* No. 1690S., dated the 24th June 1881).

General Remarks.

59. The year was an unfortunate one for forest progress. The rainfall was deficient in most places, but more particularly so in Merwara, where most of our important reserves are situated; and notwithstanding increased vigilance against the danger of fires and a large increase to the width and length of fire-lines hitherto burnt, some of the most destructive fires we have yet had occurred. This was no doubt owing in a great measure to the dryness of the year.

60. We have endeavoured to make the reserves more useful to the people this year, as was suggested in paragraph 6 of the letter from the Secretary to the Government of India, Home Department, No. 663, dated the 12th October 1880, which reviewed our report of last year; and beasts of burden have been allowed to enter the reserves to carry away grass which had been cut by the villagers. In places where it is feasible we are going to make short cart roads into the tracts, to enable the grass to be carried away still more easily; and with reference to the remarks which were made as to the surreptitious grazing (as evidenced by the large amount of impounded cattle), I have called upon the Assistant Commissioners to ascertain from what direction these trespasses usually occur and to what villages or people most of these cattle belong, so that I hope, by either extending our fencing where it is found to be deficient, or by special measures if the trespass is wilful, to prevent such large trespassing in future. I have also directed the Assistant Commissioners to report whether the grazing lands of the villagers who may be proved to be the principal trespassers are deficient or not. At the time of writing this report the answers to this call for information had not been received, but the matter shall not be lost sight of.

61. The principal event of the year has been the inspection of the reserves by two officers, Mr. Moir and Mr. Fernandez, who were deputed to examine them professionally and make suggestions. Their report was carefully considered and gone over with me by Captain Bailey, R.E., Conservator of Forests, School Circle, North-Western Provinces, who has been appointed as our professional adviser on forest matters; and a copy of the report with his memorandum was received with his No. 401, dated the 14th July 1881, and will be submitted shortly for the orders of the Local Government. It is sufficient here to say that the various suggestions will have our careful attention, and that the opinion of the inspecting officers, so far as it can be gathered from their detailed report, certainly is that considerable progress in Forest conservation has taken place in the last few years, and that the expenditure has been efficiently and effectively supervised.

62. During the year Major Lassalle and Captain Robertson, Assistant Commissioners, have again respectively been in charge of the Forest Reserves of Ajmere and Merwara, and have exerted themselves in a most creditable way to see that every thing was done to forward Forest conservancy. They are both officers who take an intelligent interest in this portion of their work.

Munshi Chuttan Lal, Superintendent of Ajmere Tanks and Forests, has also done well, and is to be commended. Ranger Sahib Roy relieved Sub-Assistant Conservator Mahomed Anwar Khan on the 21st December 1880. From what I have seen and heard of him I have every belief that Forest conservation will not suffer from this exchange of officers.

Annual Form No. 45.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Reserved Forests, 1880-81.

Division or Range.	Name of Forest	Area on 1st April 1880.		Added during the year		Excluded or transferred to other heads.		Total on 31st March 1881.		No. and date of Notification of additions and transfers, &c.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
AJMERE ...	Mohwa & Madar Hill ...	4	2,812	...	...	...	...	4	2,812	No. 1798 S., dated the 6th July 1880.	
	Nagpahar ...	4	2,660	...	...	...	...	4	2,660		
	Taragarh Valleys ...	2	1,016	...	...	...	...	2	1,016		
	Srinagar & Bir ...	6	3,576	...	...	...	...	6	3,576		
	Rajaosi ...	2	1,260	...	...	...	...	2	1,260		
	Danta ...	...	...	2	1,244	...	...	2	1,244		
	Total ...	18	11,323	2	1,244	...	...	20	12,567		
MERWARA ...	Chang ...	4	2,341	...	...	...	...	4	2,341	No. 1656 S. dated the 24th June 1880.	
	Hattun & Sheopura ...	3	1,920	...	...	...	...	3	1,920		
	Biliawas & Taragarh ...	5	3,172	...	...	...	...	5	3,172		
	Todgarh & Barakhan ...	63	40,048	...	...	...	...	63	40,048		
	Dilwara & Chang Birs ...	...	235	...	...	...	...	...	235		
	Borwar & Kotra ...	6	3,923	...	...	...	...	6	3,923		
	Anspahar ...	2	1,466	...	...	...	...	2	1,466		
	Dewair ...	...	...	19	12,203	...	...	19	12,203		
	Total ...	83	53,105	19	12,203	...	...	102	65,308		
	Grand Total ...	101	64,428	21	13,447	...	...	122	77,875		

Annual Form No. 46.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Plantations, 1880-81.

Division.	Name of Plantation.	On 1st April 1880.				During 1880-81.				On 31st March 1881.			
		Area.	Total cost.			Area added.	Cost.			Total area.	Total cost.		
	Out of the area taken up under the Regulation.	Acres.	Rs.	A.	P.	Acres.	Rs.	A.	P.	Acres.	Rs.	A.	P.
Ajmere ...	Mohwa and Madar Hill	83	7,732	5	1	..	112	1	0	83	7,844	6	1
	Nagpahar	23	8.332	9	10	1	142	0	4	24	8,474	10	2
	Taragarh Valleys	98	8.437	3	1	...	395	7	9	98	8,832	10	10
	Srinagar Bir	8	815	3	6	..	91	12	5	8	906	15	11
	Total ..	212	25,317	5	6	1	741	5	6	213	26,058	11	0
Merwara ...	Chang tract	15	1,462	6	6	...	69	7	2	15	1,531	13	8
	Hattun and Sheopura	30	1,398	1	9	...	57	5	11	30	1,455	7	8
	Biliawas and Taragarh	12	924	12	10	...	39	0	2	12	963	13	0
	Todgarh and Barakhan	46	902	11	11	...	56	8	5	46	959	4	4
	Dilwara and Chang Birs	66	728	5	3	...	101	9	6	66	829	14	9
	Total ...	169	5,416	6	3	..	323	15	2	169	5,740	5	5
	Grand Total ..	381	30,733	11	9	1	1,065	4	8	382	31,799	0	5
	Area not taken up under the Regulation.												
Ajmere ...	Shikast Masjid	6	1,172	11	2	...	64	1	8	6	1,236	12	10
Merwara ...	Pargde Plantation	24	1,500	0	0	—16	93	11	7	8	1,593	11	7
	Total ...	30	2.672	11	2	—16	157	13	3	14	2,830	8	5
	Total Plantations ..	411	33,406	6	11	—15	1,223	1	11*	396	34,629	8	10
	Nurseries.												
Ajmere .	Ajmere Nursery	1	300	0	0	9	1,662	9	0	10	1,962	9	0
Merwara ...	Beawar „	4	200	0	0	...	...			4	200	0	0
	Total Nurseries ...	5	500	0	0	9	1,662	9	0†	14	2,162	9	0

Remarks.

	Rs.	A.	P.
* Expenditure under A. VI, b.	7	0	11
A. VIII, d. ...	1,045	2	3
Proportionate charges of Nursery expenses .	170	14	9
Total	1.223	1	11
† Expenditure under A. VI, b.	0	4	5
A. VIII, b. ...	1,662	9	0
A. VIII, d. ...	471	11	8
Total	2.134	9	1
Deduct—Share of expenses spread over various plantations, Rs. 170 14 9			
Written up to profit and loss for plants supplied gratis, Rs. 301 1 4	472	0	1
	1,662	9	0

Form No. 47.—[*Suggested.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Forest Tracts protected from fire during the dry season of 1881 (*to accompany report,* 1880-81).

Division.	Forest Tracts.	Up to 30th June 1880.		During dry season of 1881.				Total cost up to the 30th June 1881.	Year when protection commenced.	Remarks.
		Area actually protected.	Total cost.	Area attempted to be protected.	Failures.	Area actually protected.	Amount expended.			
		Acres.	Rs. A. P.	Acres.	Acres.	Acres.	Rs. A. P.	Rs. A. P.		
Ajmere ...	Mohwa Madar Hill	2,718	27 0 0	2,812	...	2,812	28 11 6	55 11 6	...	
	Nagpahar	2.660	31 0 0	2,660	2	2,658	41 14 0	72 14 0	1880	
	Taragarh Valleys	1,015	193 10 1	1,016	...	1.016	52 15 3	246 9 4	1874	
	Srinagar Bir	3,574½	38 8 6	3.575	...	3,575	26 0 0	64 8 6	1880	
	Rajassi	1,100	52 9 7	1,260	·33	1259·67	34 15 0	87 8 7	"	
	Total ...	11,067½	342 12 2	11,323	2·33	11320·67	184 7 9	527 3 11	...	
Merwara ...	Chang	2,341	...	2.341	...	2.341	15 13 6	15 13 6	1881	
	Hattun and Sheopura	1,920	.	1,920	...	1,920	...	...	.	
	Biliawas and Taragarh	3.172	447 12 0	3,172	...	3,172	37 5 0	485 1 0	1874	
	Todgarh and Barakhan	38,392	2,674 2 11	40,048	681	39,367	655 7 4	3,329 10 3	"	
	Dilwara and Chang Birs	235	...	235	...	235	...	...	...	
	Borwar and Kotra	3,920½	..	3,923	117	3,806	..	...	..	
	Anspahar	1,466	188 15 6	1.466	...	1,466	72 7 0	261 6 6	1877	
	Dewair tract	...	...	12,203	173	12,030	173 14 0	173 14 0	1881	
	Total ..	51,446½	3,310 14 5	65.308	971	64.337	954 14 10	4,265 13 3	...	
	Grand Total ...	62.514	3,653 10 7	76.631	973·33	75657·67	1,139 6 7	4,793 1 2	...	

Charged in previous years ..	3,537 6 6
Charged in 1880-81	1,144 12 4
Charged in 1881-82	110 14 4
Total ..	4.793 1 2

Annual Form No. 48.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Prosecutions for Breaches of Forest Rules, 1880-81.

Forest Division and Civil District.	Injury to forests by fire.		Unauthorised felling or appropriation of wood and minor forest produce.		Grazing without permission or in tracts in which grazing is prohibited.		Other Offences.		Total.				Remarks.
									Prosecutions.		Convictions.		
	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Ajmere	2	4	50	118	1	1	2	2	55	125	48	95	
Merwara	...	...	13	130	12	30	...	...	25	160	12	27	
Total ...	2		63	248	13	31	2	2	80	285	60	122	

Annual Form No. 49.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE—MERWARA.

Summary of Revenue and Expenditure for 1880-81.

Budget Heads.	Rs.	A.	P.
REVENUE.			
I.—Timber and other produce removed from the forests by Government agency—			
a. Timber	...		
b. Firewood and charcoal	13	4	0
c. Bamboos	...		
d. Sandal-wood	...		
e. Grass and other minor produce	...		
II.—Timber and other produce removed from the forests by consumers or purchasers—			
a. Timber	...		
b. Fire-wood and charcoal	310	15	6
c. Bamboos	...		
d. Grazing and fodder grass	197	1	9
e. Other minor produce	91	9	3
III.—Confiscated drift and waif wood	0	4	9
IV.—Revenue from forests not managed by Government—			
a. Duty on foreign timber and other forest produce	...		
b. Revenue from shared and private forests	...		
V.—Miscellaneous—			
a. Fines and forfeitures	511	1	6
b. Refunds	...		
c. Other sources	...		
Total Revenue ...	1,124	4	9
EXPENDITURE.			
A.—Conservancy and Works.			
I.—Timber and other produce removed from the forests by Government agency—			
a. Timber	...		
b. Fire-wood and charcoal	18	2	6
c. Bamboos	...		
d. Sandal-wood	...		
e. Grass and other minor produce			
II.—Timber and other produce removed from the forests by consumers or purchasers	15	7	8
III.—Confiscated drift and waif wood—	...		
IV.—Revenue from forests, not managed by Government—			
a. Duty on foreign timber and other forest produce	...		
b. Revenue from shared and private forests	...		
V.—Rent of leased forests, and payments to shareholders in forests managed by Government.			
VI.—Live Stock, Stores, Tools and Plant—			
a. Purchase of cattle	32	0	0
Feed and keep of cattle	7	5	4
c. Stores, tools and plant	45	7	0
Carried over ...	118	6	6

Annual Form No. 49.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Summary of Revenue and Expenditure for 1880-81—contd.

Budget Heads.	Rs.	A.	P.
EXPENDITURE—contd.			
Brought over ...	118	6	6
VII.—Communications and Buildings—			
a. Roads and bridges ...	50	4	0
b. Buildings ...	36	4	1
c. Other works ...	...		
VIII.—Demarcation, Improvement and extension of Forests—			
a. Demarcation ...	2	4	0
b. Compensation for land and rights ...	1,662	9	0
c. Surveys and working plans ...	...		
d. Plantations ...	1,667	9	10
e. Protection from fire ...	1,144	12	4
f. Other works ...	46	4	3
IX.—Miscellaneous—			
a. Refunds ...	...		
b. Law charges ...	...		
c. Other charges ...	27	9	3
Total A.—Conservancy and Works ...	4,755	6	3
B.—Establishments.			
I.—Salaries—			
a. Conservators ...	...		
b. Superior officers ...	1,796	12	4
c. Subordinate forest and depôt establishments ...	3,525	15	7
d. Office establishments ...	1,415	3	4
e. Deputation and special allowances ...	...		
II.—Travelling Allowances—			
a. Conservators ...	...		
b. Superior officers ...	501	13	0
c. Subordinate forest and depôt establishments ...	117	8	7
d. Office establishments ...	122	4	4
III.—Contingencies—			
a. Stationery ...	13	13	9
b. Carriage of tents and records ...	76	15	3
c. Rents, rates, and taxes ...	...		
d. Pay of police guards ...	...		
e. Official postage ...	20	0	0
f. Sundries ...	77	5	0
Total B.—Establishments ...	7,667	11	2
Grand total of all Expenditure ...	12,423	1	5

Annual Form No. 50.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Account Current for the year 1880-81

Dr	Rs.	A.	P.	Cr.	Rs.	A.	P.
To Cash Balance on 1st April 1880	.....			By Expenditure as per annual summary	12,423	1	8
„ Revenue as per annual summary	1,124	4	9	„ Forest Cash Remittances (Local)	1,124	4	9
„ Forest Cash Remittances (Local)	11,885	2	1	„ Advances recoverable	1,971	6	6
„ Advances recoverable	2,509	5	10	„ Inter-departmental Transfers (Public Works Department, Rajputana, and other branches)	27	15	1
„ Inter-departmental Transfers (Public Works Department, Rajputana, and other branches)	27	15	1	„ Closing Balance on 31st March 1881	.....		
Total ...	15,546	11	9	Total ...	15,546	11	9

Annual Form No. 51.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Statement of outstandings and liabilities on account of Contractors and Disbursers for 1880-81.

Division.	Department Debtor.			Department Creditor.			Balance Due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstandings.)	By Department (Liabilities.)	
Ajmere Forest Division ...	...	2,509 5 10	2,509 5 10	748 4 9	1,971 6 6	2,719 11 3	300 12 6	90 7 1	
Total ...	...	2,509 5 10	2,509 5 10	748 4 9	1,971 6 6	2,719 11 3	300 12 6	90 7 1	

Govt. Central Branch Press, Simla.—No. 623 H. D.—20-10-81.—270.

No. 1143 F., dated Fort William, the 26th December 1881.

From—A. MACKENZIE, Esq., C. S., Offg. Secretary to the Government of India, Home Department.

To—The Surveyor General of India.

I AM directed to acknowledge the receipt of your letter No. 593F., dated the 25th October last, submitting the Annual Report of the Superintendent of Forest Surveys for the year 1880-81, together with your remarks thereon.

2. During the year under review the survey of the sub-montane forests of Kumaun and Garhwal has been continued, while in addition certain operations were conducted in the Tons Division and in Berar. The total outturn of field work appears somewhat smaller than that of the year 1879-80. The area planetabled in 1880-81 comes to 260 square miles as against 318 square miles in the previous year, while the areas triangulated during the two years amount to 93 and 237 square miles respectively. The falling off is explained by the fact that a very large number of the employés were attacked by fever, which necessitated the closing of the field work at an early date, and by the deputation of separate parties to Ranikhet and Berar, who did work which cannot be indicated in square miles.

3. The expenditure of the year amounted to Rs. 40,335 as against Rs. 46,878 in the previous year. The total expenditure for field and office work together per square mile planetabled stands as follows:

		Rs.
Cost per square mile in 1879-80	... ...	111
Do. do. 1880-81	...	118
	Increase ...	Rs. 7 per

square mile, which is explained by what has been stated above.

4. On the whole the cost of the work has considerably decreased since the Forest Survey Branch was first started, as will be seen from the subjoined data:

	Cost per sq. mile.
	Rs.
Dehra Dun and Saharanpur Survey	310
Jaunsar and Tons Survey	203
Kumaun and Garhwal Survey (up to date) ...	115

This is very satisfactory. At the same time it is believed that the cost is still somewhat higher than in the Imperial Survey Department, and this is due to the fact that the operations of the Forest Survey are generally conducted in remote and difficult parts of the country, which have naturally been set aside as forests.

5. In paragraph 8 of the report it is stated that the lists of all maps available of the reserved forests in the different provinces, the compilation of which was suggested in the Government of India orders on the report for 1879-80, are under preparation. It is hoped that this subject may not be lost sight of, and that the lists may be completed at an early date.

6. The Governor General in Council notices that you consider the report to be highly satisfactory, and he is glad to observe that the Forest Survey Branch has now been brought to a high state of efficiency. For this much credit is due to the Superintendent, Major Bailey. The services rendered to the department by the Head Quarters Office of the Trigonometrical Survey at Dehra, under Mr. Hennessey, are also, as you point out, deserving of acknowledgment.

No. 1144 F.

COPY forwarded to the Government of the North-Western Provinces and Oudh for information.

No. 1145 F.

COPY forwarded to the Superintendent of Forest Surveys for information.

N. C. D.—Home Department Press—No. 449—26 12-81—355

REPORT OF THE SUPERINTENDENT OF FOREST SURVEYS FOR 1880-81.

No. 147, dated the 15th October 1881.

From—Major F. BAILEY, R. E., Superintendent of Forest Surveys.

To—The Surveyor General of India.

I HAVE the honour to forward in duplicate my Progress Report from the 1st October 1880 to the 30th September 1881, and to request the favour of your forwarding one copy to the Government of India.

No. 593F., dated the 25th October 1881.

From—Lieutenant-General J. T. WALKER, C. B., R. E., Surveyor General of India.

To—The Offg. Secretary to the Government of India, Home Department.

I HAVE the honour to forward herewith Major Bailey's Annual Report of the Forest Survey Department from the 1st October 1880 to the 30th September 1881.

2. The general outturn of work, both in the field and in office, appears to have been as much as could possibly be executed by the establishment at Major Bailey's disposal, under the varied circumstances which are fully set forth in his report. An intricate portion of the computations was examined in my office and found correct in all respects. The mapping generally is of a high order, not inferior to some of the best of the Survey Department, which is due in great measure to the excellent draughtsmanship of Messrs. Reynolds and Litchfield; and the general organization of Major Bailey's Office at Dehra is very creditable to that officer.

3. The value of the present report is much enhanced by the account of the method of preparing the final maps in paragraph 7, the details of expenditure and rate per square mile in paragraphs 9 and 10, and the description of the Forest Survey work in paragraph 11. The gradual decrease in the rate of expenditure is a satisfactory proof of the growing efficiency of the Surveyors, both European and Native. I am gratified to notice that it is to improved efficiency that Major Bailey looks for reduction of cost rate, rather than to endeavouring to get over the ground with greater rapidity than is compatible with accurate survey. At the same time I think he exercises much judgment in directing the energies of the surveyors to the points of most importance for forest administration; thus, while all the principal roads, water-partings and water-courses, and the sub-divisions of different patches of forest, are closely surveyed and mapped, the less important hill features are sketched roughly, and are shown on the field sketches in a different colour from the accurately delineated features; thus hereafter there will be no difficulty in distinguishing close survey from approximate survey, which is a very great advantage.

4. Much valuable collateral work of instruction of officers and subordinates, and granting certificates of qualification and preparing special maps for the requirements of the Local Governments, appears to have been executed in connection with the Forest Surveys.

5. I consider the report to be highly satisfactory in all respects but one; it makes no mention of the constant and valuable assistance the Forest Survey Department receives in the publication of its maps from the Head Quarters Office of the Trigonometrical Survey at Dehra, under Mr. Hennessey, as already set forth in paragraph 3 of my No. 522E., dated the 11th October 1880.

Annual Progress Report of the Forest Survey Department from the 1st October 1880 to the 30th September 1881, by Major F. BAILEY, R.E., *Superintendent of Forest Surveys, dated the 15th October 1881.*

THE SEASON'S FIELD WORK.

Kumaun and Garhwál including Ránikhet.

THE main camp under Mr. W. H. Reynolds, Deputy Superintendent, marched from Dehra on the 9th November, and reached Nánakmatta, in the Tarai District, on the 5th December. Planetabling was at once commenced, and it was continued in the Nindhaur Valley, Kali Kumaun, the Dhiáni Rau Forests, and on the Gola Nadi to the south-east of Haldwáni until the 26th April, when the camp marched for Dehra. The country lying between Láldháng and Saneh, in Garhwál, was triangulated and traversed in advance. The camp was moved to Dogári on the 13th December and to Haldwáni on the 15th April. On the 26th April Mr. Chill proceeded with four Native Assistants to Ránikhet, where he was employed until the 15th June in completing the survey of the forests of that Forest Division. His work consisted in surveying the boundaries of the numerous plots of private land within the forests which had not been demarcated at the time that the survey of the forests was made.

Tons Division.

2. Mr. Litchfield, assisted by three Native Surveyors, worked in the Deota, Lambatách and Kotigádh leased forests (Tiri-Garhwál) from the middle of April until the beginning of July, when he completed the work. Mr. Reynolds took a Native Surveyor to the Raiengarh and Dádi Forests in May, and after giving him instructions to carry out the triangulation, he returned to Dehra. The triangulation was completed in a very satisfactory manner.

Berar.

3. The Government of India having ordered a survey on the scale of 4″ = 1 mile of ten black soil villages within the Bairagarh Reserve, and also the entry on existing maps (scale 1″ = 1 mile) of the boundaries of the Bairagarh, Gugumál and Jiri Reserves, as well as the entry of all new roads on the maps of the Bairagarh and Gugumál Reserves, and the entry on existing maps (scale of 2″ = 1 mile) of the boundaries of the reserves in the plains of South Berar, Mr. Reynolds was directed to proceed to Amraoti for the purpose of consulting with the Conservator of Forests regarding the carrying out of this work. He spent the 16th and 17th March in Amraoti and the neighbourhood, and submitted a report on which the plan of operations was determined. Mr. Thomas Marten, with two Native Surveyors, left Kumaun early in April, and after traversing the boundaries of six villages, the Ráipur cart road, and a portion of the northern boundary of the Bairagarh Reserve, he returned to Dehra at the setting in of the rains.

4. A summary of the outturn of field work will be found in Appendix (A). The area planetabled on the scale of 4″=1 mile was 260 square miles. In Kumaun and Garhwál the average monthly outturn for a party of one European and three Native Surveyors was 11·2 square miles. The amount for one European and 3½ Native Surveyors during the previous season having been 10·6 square miles. One European and three Native Surveyors employed in the Tons Forests turned out on an average eight square miles per mensem. Here the ground was much more difficult than that surveyed in Kumaun. The total area planetabled was less than that reported during the previous season (318 square miles), the reasons being that in consequence of a very large number of the establishment having become laid up with fever, the work had to be closed on an early date; that Mr. Thomas Marten and two Native Surveyors were deputed to Berar early in April; and that against the heavy work in Ránikhet, which occupied more than one and-a-half months, and involved the fixing of 1,062 boundary marks round 258 plots, it is not possible to show any area of ground planetabled, because the natural features of the country had all been previously surveyed. The area triangulated was 93 square miles, within which 158 points were fixed. The linear distance traversed was 423 miles, within an area of 279 square miles; the number of traverse stations fixed being 5,177. Barometrical observations were made at 768 places. The triangulation and traversing are sufficiently advanced to provide for the coming season's work, 212 square miles of ground being triangulated and traversed, and 206 square miles being triangulated only.

Abstract of field work executed.

OFFICE WORK.

5. An abstract of the outturn of computations will be found in Appendix (A). The number of linear miles of traversing computed was 269, the average correction on the hypotenuse being 4·7 per 1,000. The whole of the traverse work in Kumaun and Garhwál has been computed. The number of triangles worked was 328, the number of points determined being 171. The number of Great Trigonometrical Survey stations computed from latitude and longitude was 15. The computations of triangles is sufficiently advanced to provide for the coming season's work. The number of triangles worked to determine heights was 680, and the number of points of which the height was thus determined was 285. The number of barometrical observations computed was 1,199, and the number of points of which the heights were determined thereby was 821.

Computations.

6. An abstract showing the original drawings under preparation during the year will be found in Appendix (B). Of the Kumaun and Garhwál sheets reported as being in progress last year, Nos. LIV, LV and LXIV have been printed. Sheets Nos. XII, XIII, XLVI, XLVII, XLVIII, LXII and LXIII are in the Press. The following sheets are ready with the exception of the printing of the names, Nos. XLIV, LVI, LX, LXI, LXVII, while the following sheets are still in the hands of the draughtsman, Nos. LVII, LXV and LXVIII. A map of the reserved forests in the Kheri and Pilibhit Districts of Oudh, and another of the reserved forests in the Bahraich District of Oudh, both on the scale of 4 miles=1″, were drawn and printed. A map of the reserved and protected forests in the Kumaun Civil Division was drawn on the scale of 4 miles=1″, and it is now in

Map drawing.

the Press. A sketch map showing the forest reserves in the Pegu and Tenasserim Divisions of British Burma was drawn on the scale of 16 miles=1", and is now going to Press. A chart of triangulation and traversing for the Kumaun and Garhwál Forest Survey is in progress, and Sheet III is now in the Press. Four other maps of less importance than those above mentioned were drawn, and three of them were printed to accompany reports.

Method of preparing fair drawings.

7. The fair sheets are drawn on bank post paper bound at their edges with cloth. Before the sheet is made over to the draughtsman, the graticule is projected by the aid of a brass frame perforated at the proper intervals, and the trigonometrical stations are plotted. In each drawing table is inserted a pane of glass, below which is fixed a tin reflector to throw the light upwards. The table is surrounded on three sides with curtains to keep out light from above. The fair sheet is laid on the table and the field sheets, which are drawn on bank post paper mounted on thin cloth, are passed under it and adjusted over the glass by means of the squares and trigonometrical stations, and the topographical detail is traced in ink directly from the field sheets. The drawing proceeds uninterruptedly, without any intermediate tracing in pencil over an ordinary tracing glass, without the use of black transfer paper, and without consideration of the position of the names, which are subsequently added in the following manner. A list of all the names which are to appear on the fair sheet is compiled from the field sheets—the names are given. Serial numbers which are entered both on the list and in the proper places on a sheet of tracing cloth drawn up to correspond with the fair drawing; and the kind of type to be used is entered on the list opposite each name. The list thus prepared is made over to the type-printer, who sets up each name in succession, and prints it from four to six times on white paper. Several sets of names appear on each sheet of printing paper, the proper serial number being written against each name, and the sheets are then sewn together and handed, with the list and the tracing cloth, to the man who is to attach the names to the fair drawing. This he does after the drawing is quite completed; he selects the best impression of each name, cuts it out, and fastens the slip with gelatine in its proper place. He is guided to the locality by the number on the printing paper and the corresponding number on the tracing cloth, and he selects the exact spot for the name by reference to the field sheet. The edges of the slips are then scraped down, and if they appear too white, the drawing is carried over their edges to the required extent. The fair drawing is then ready to be printed. The system here described has been found to answer very well, its great advantages being that while the topographical detail can be copied directly from the field sheet, and that thus small errors of copying which are unavoidable under most other systems are not so readily incurred, the four men, viz., the draughtsman, the list maker, the printer, and the man who attaches the names to the sheet, work quite independently of one another from the beginning to the end of the season, and no one man is delayed by having to wait for the completion of the work of another.

Miscellaneous work.

8. Thirty-two tracings were made for various forest and district officers, 305 printed maps were coloured, and 94 printed maps were mounted in book form. The lists of all available maps of the reserved forests in the various provinces under the Government of India adverted to in the review on last year's report are under compilation.

EXPENDITURE.

Expenditure during the survey year.

9. The amounts expended on field and office work in Kumaun and Garhwál and on the Tons, as well as the charges for work not connected with these surveys, will be found in Appendix (C). The cost of the work in Berar, which amounted to Rs. 1,880, was defrayed from Provincial funds. In Kumaun and Garhwál the cost of the field work was Rs. 21,592, and of the office work Rs. 6,829. In former years it has been usual to give the cost per square mile of the field work only, but as this is not customary in the Survey of India, the cost per square mile as now given includes both field and office work. It is calculated on the area planetabled, and amounts to Rs. 118 per square mile as compared with Rs. 111 for the previous year. The cost per acre was, in 1880-81, 3 annas, and in 1879-80 it was 2 annas 10 pies. The rates of 1880-81 were higher, than those of the previous year, 1st, because, as previously explained, some heavy and intricate work had to be done at Ránikhet, which could (had the boundaries and marks been ready at the time the forests were surveyed in 1878-79) have been laid down on the maps without much additional trouble or expense, but which, having to be done after the survey had been otherwise completed, occupied a considerable time and afforded no additional area of planetabling; 2nd, because the establishment suffered severely from fever; towards the close of the field season many of them were under treatment in hospital, and several men returned to Dehra Dún seriously ill. Mr. Reynolds still suffers from fever contracted during the season's work.

Final cost of work hitherto accomplished by the Forest Survey.

10. It is now desirable to refer to the final cost of the work hitherto accomplished by the Forest Survey. The Dehra Dún and Saháranpur Survey has cost 7 annas 9 pies per acre, or Rs. 310 per square mile including all charges; the Jaunsár and Tons Surveys have cost 5 annas 1 pie per acre, or Rs. 203 per square mile; the Kumaun and Garhwál Survey has, up to the close of the period to which this report relates, cost 2 annas 11 pies per acre, or Rs. 115 per square mile, and it is probable that the final cost of this work will be 2 annas 10 pies per acre, or Rs. 112 per mile. It will therefore be seen that the cost of the work has latterly very much decreased. At first the establishment was new to the work, ground had sometimes to be surveyed twice over, and the present regular system had not been developed. The Native Surveyors, who are chiefly hill men from Garhwál, trained entirely in the Forest Survey, are now skilful, both in out-door work and in office work. The European Surveyors know what is required of them, and the work progresses much more rapidly, with a corresponding reduction in rate. The cost per square mile is however probably still in excess of that usually incurred by other survey parties, and it may perhaps not be considered out of place if a brief account of the system of work now adopted in the Forest Surveys is here given.

Description of the Forest Survey work.

11. The work hitherto accomplished by the Forest Survey differs from that ordinarily undertaken by the Imperial Survey Department, principally in that the ground is mountainous and forest-clad, such as would usually be surveyed by the Topographical Branch on the scale of 1″ = 1 mile, based as a rule on triangulation only, the detail being sketched on the planetable, and the scale and system of work adopted by the Forest Survey are more analogous to those employed in the Revenue Branch, which generally speaking is engaged in the survey of less rugged and more open country. The

most densely wooded tracts have been selected as forest reserves, and they are usually far from villages, and supplies and carriage are difficult to obtain. The survey is made on the comparatively large scale of 4″ = 1 mile, and to enable the maps to be fully utilized for the purpose of making valuation surveys, and for the computation of the areas of compartments, as well as to enable the densely wooded ground to be readily recognized from the maps, it is necessary to show many details, such as small ravines and spurs, and to lay them down on the maps with accuracy. The first step is to extend the triangulation previously executed by the Imperial Survey Department, so as to furnish the requisite number of fixed points for work on the larger scale. A network of traverses is then run over the ground, all important roads, paths, and stream beds being measured; the traverses are connected with the trigonometrical stations, and the numerical values of the traverse stations were calculated from them. In the case of plateaux or other level ground, traverses are run across the drainage, so as to give a sufficient number of fixed points for the guidance of the planetablers. The planetable work is based on the trigonometrical and traverse stations. In hilly ground the positions of all important ridges and spurs are fixed by means of planetable intersections at short intervals, and the beds of all important watercourses are chained, the chaining being connected with the trigonometrical or traverse stations, or with points fixed by intersection on the planetable. This work is done by Native Sub-Surveyors on pay varying from Rs. 8 to Rs. 31 per mensem, three or four of them working under the direction of a European Surveyor. They then sketch in the ground between the measured elevations and depressions, and it is the business of the European Surveyor to check the accuracy and sufficiency of their measurements, and to complete the sketching in a correct and artistic manner. In order that it may be possible to distinguish at a glance on the field sheets the portions of ground which have been accurately surveyed from those which have merely been sketched, the features which have been laid down by chain measurement or by numerous intersections on the planetable are shown on the field sheets in a different colour from the rest of the work. It is of great importance to have numerous local names correctly entered on the maps. On each field sheet is pasted a printed form in which the names within the area surveyed are entered by the planetabler both in English and in the Vernacular, reference being made by means of letters to the localities or features of the ground to which they relate. In order to furnish a large number of altitudes which are of so much importance for forest work, numerous observations are made with the aneroid barometer, and a printed form for the entry of the barometrical observations is pasted on to each field sheet. Each planetabler is also furnished with a sheet of tracing cloth, on which he records the nature of the forest growth in such detail as is ordered from time to time. This work occupies a very short time, and when it is intelligently done it furnishes a very useful record.

INSTRUCTION OF OFFICERS AND SUBORDINATES.

12. Under the orders of the Government of India, dated the 3rd August 1875, the following officers have since that date been attached to the Forest Survey for instruction :—

Mr. O. Greig,	Assistant Conservator of	Forests	...	1875-76
„ Jellicoe	„	„	...	1876-77
„ Down	„	„	...	1876-78
„ Stewart	„	„	...	1876-79

These officers all gained certificates of qualification by the Higher Standard. Moung Shwe Gone, Forest Apprentice from British Burma, was under instruction in 1878-79, and gained a certificate of qualification by the Lower Standard. Seven apprentices, students at the Forest School, are now under instruction. A certificate of qualification by the Higher Standard has been granted to Mr. H. C. Hill, Assistant Conservator, who was formerly on the Forest Survey Staff, and to Babu Karuna Nidhan Mukerji, formerly a Sub-Surveyor in the Forest Survey and now a Probationer for the higher grades of the Department.

CERTIFICATES OF QUALIFICATION IN SURVEYING GRANTED TO OFFICERS AND OTHERS WHO WERE NOT ATTACHED TO THE FOREST SURVEY.

13. Since October 1877 the maps and field books of 38 officers, subordinates and candidates for the Department have been examined and reported on. The detail is as follows :—

Officers	15
Subordinates	6
Candidates	17
Total ...	38

Certificate of qualification by the Lower Standard were given to 26 of these; the work of three subordinates and one candidate was examined during the past year.

OFFICERS OF THE SUPERIOR STAFF.

Mr W. H Reynolds, Deputy Superintendent, Forest Surveys.

14. Mr. Reynolds has had executive charge of the Kumaun and Garhwál Survey and of the office work at head quarters. He has conducted his duties in a most satisfactory manner, showing much tact in dealing with his subordinates, as well as professional skill in superintending the execution of the work.

Mr. E F. Litchfield, Assistant Conservator of Forests.

15. Mr. Litchfield was employed in planetabling in Eastern Kumaun from the beginning of the field season until the 12th April, when he left for the Tons Forests and worked in Kotigádh, Bámso and Surás. He returned to head quarters on the 15th July, and obtained examination leave from the 3rd September. He has worked well.

FOREST SURVEYORS.

Mr. G. P. Chill.

16. Mr. Chill marched with the head quarters camp from Dehra on the 9th November, and was employed in Eastern Kumaun until the 27th April, when he marched for Ránikhet, and executed the work there which has been previously described. He returned to head quarters on the 19th June. He continues to work well and to give satisfaction.

Mr. Thomas Marten.

17. Mr. Thomas Marten marched from Dehra with the head quarters camp, and was employed in the Nindhaur Valley until the 5th April, when he was deputed to Berar to take up the work there. He returned to Dehra in the middle of June. He has worked very well throughout the year.

18. Mr. James Marten was employed throughout the field season in Kumaun, returning to Dehra on the 18th May. He did a good season's work, but his health has suffered from repeated attacks of fever.

Mr. James Marten.

SUB-SURVEYORS

19. The average monthly strength of the native establishment employed on each kind of work during the field season was as follows :—

Triangulation	...	...	...	...	½
Plotting boards	...	...	...	...	½
Traversing	...	...	...	...	2½
Computing	...	...	...	...	2
Planetabling	...	...	...	...	14
			Total in field	...	19½
			At head quarters	...	5
			Total	...	24½

As a rule they did their work in a very satisfactory manner.

20. The following documents are appended to this report, viz.—

1. Chart illustrating the progress of the work.
2. Appendix (A). Summary of outturn of field work and computations.
3. Appendix (B). Summary of outturn of drawing and miscellaneous work.
4. Appendix (C). Summary of expenditure from the 1st October 1880 to the 30th September 1881, showing the amounts expended on field and office work.
5. Annual Form No. 49. Summary of revenue and expenditure during the financial year.
6. Annual Form No. 51. Statement of outstandings and liabilities.

APPENDICES.

APPENDIX (A).

Summary of the outturn of field work and computations by the Forest Survey Department from the 1st October 1880 to the 30th September 1881.

No.	Kumaun and Garhwál and Jaunsár Survey.	Amount.	Remarks.
1	Area planetabled on the scale of 4″ = 1 mile— (a) Kumaun and Garhwál ... 241 square miles (b) Tons ... 19 " "	260	Square miles.
2	Area triangulated— (a) Kumaun and Garhwál ... 61 " " (b) Dadi-Raiengárh ... 32 " "	93	Ditto.
3	Number of points fixed	158	
4	Area traversed	279	Ditto.
5	Number of linear miles traversed— (a) Kumaun and Garhwál ... 250 (b) Dehra Dún ... ... 61 (c) Berar 112	423	
6	Number of traverse stations	5,177	
7	Ditto linear miles of traversing computed ...	269	Average correction per 1,000 = 4·7.
8	Ditto triangles worked	328	Computed in duplicate.
9	Ditto points fixed thereby	171	
10	Ditto Great Trigonometrical Survey stations computed.	15	
11	Ditto triangles worked to determine heights ...	680	Ditto ditto.
12	Ditto points of which the heights were determined thereby.	285	
13	Ditto barometrical observations ...	768	
14	Ditto ditto ditto computed ...	1,199	Ditto ditto.
15	Ditto points, the heights of which were determined thereby.	821	

NOTE.—For the work of the coming field season there are 212 square miles triangulated and traversed in advance and 206 square miles triangulated only.

APPENDIX (B).

Summary of outturn of drawing and miscellaneous work by the Forest Survey Department from the 1st October 1880 to the 30th September 1881.

	Original drawings in progress.	Number.	
1	Kumaun and Garhwál Sheets XLIV, LVI, LVII, LX, LXI, LXV, LXVII and LXVIII.	8	Sheets.
2	Map of the Reserved Forests in Districts Kheri and Pilibhit, scale 4 miles = 1″.	1	Ditto.
3	Map of the Reserved Forests in District Bahraich, scale 4 miles = 1″.	1	Ditto.
4	Map of the Reserved and Protected Forests in Districts Kumaun, Garhwál and Tarai, Kumaun Division, scale 4 miles = 1″.	1	Ditto.
5	Sketch map showing Forest Reserves (sanctioned and proposed) in the Pegu and Tenasserim Divisions of British Burma, scale 1″ = 16 miles.	1	Ditto.
6	Map showing the working blocks proposed to be formed in the Patli Dún Hill Forests, scale 1″ = 2 miles.	1	Ditto.
7	Map of the Patli Dún Hill Forests to accompany Mr. Dansey's working plan report, scale 1″ = 2 miles.	1	Ditto.
8	Sketch map showing Kotlai Road and branches, District Kumaun, scale 1″ = 2 miles.	1	Ditto.
9	Map of Todgarh Forest showing proposed felling operations, scale 4″ = 1 mile.	1	Ditto.
10	Sheet No. III.—Chart of Triangulation of Kumaun and Garhwál, scale 1 mile = 1″.	1	Ditto.
	Tracings made.		
11	Tracings made for various Forest and District Officers...	32	Ditto.
	Maps coloured.		
12	Printed maps of various kinds coloured	305	Ditto.
	Maps mounted.		
13	Printed maps mounted in book form	94	Ditto.
	Surveys of candidates examined.		
14	Surveys of candidates for the Forest Department examined and reported on.	4	.....

APPENDIX (C).

Summary of Expenditure from the 1st October 1880 to the 30th September 1881, showing the amounts expended on Field and Office work.

Number.	Months.	Kumaun and Garhwal.		Tons.		General.	Total.	Remarks.
		Field.	Office.	Field.	Office.			
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1	October 1880 ...	10	1,404	131	110	1,123	2,778	
2	November " ...	243	1,088	374	60	1,320	3,085	
3	December " ...	2,373	688	...	...	377	3,438	
4	January 1881 ...	3,303	107	...	...	181	3,591	
5	February " ...	3,477	87	...	...	175	3,739	
6	March " ...	3,385	76	...	...	525	3,986	
7	April " ...	3,990	42	148	...	209	4,389	
8	May " ...	3,047	68	399	...	139	3,653	
9	June " ...	1,288	229	1,255	...	463	3,235	
10	July " ...	476	700	716	100	947	2,939	
11	August " ...	...	1,092	275	200	1,750	3,317	
12	September " ...	...	1,248	...	350	1,106	2,704	
	Total ...	21,592	6,829	3,298	820	8,315	40,854	

PROGRESS REPORT

OF

FOREST ADMINISTRATION

IN

AJMERE,

AND

REPORT ON THE OPERATIONS OF THE FOREST SURVEY,

FOR

1880-81,

WITH THE ORDERS OF THE GOVERNMENT OF INDIA.

1881.

No. 919F., dated Simla, the 7th October 1881.

From—A. MACKENZIE, Esq., C.S., Offg. Secretary to the Government of India, Home Department,

To—The Chief Commissioner of Ajmere.

I AM directed to acknowledge the receipt of your Secretary's letter No. 2114S., dated the 10th August last, submitting, with a copy of your orders thereon, the Report of Forest Administration in Ajmere and Merwara for the year 1880-81; and in reply to communicate the following observations by the Government of India.

2. It is satisfactory to notice that the area of the State forests taken up under the Regulation of 1874 has been extended during the year by 13,447 acres. Of this addition 12,203 acres lie in the extreme southern portion of Merwara, where the extension of the reserves had been strongly recommended by the Inspector General of Forests, and 1,244 acres in the catchment area of the Danta Tank near Nusseerabad. The total area of State forests in the province now stands therefore at 77,875 acres.

A separate communication* has recently been addressed to you regarding the desirability of extending the areas reserved for improvement in the hot, dry hills of Ajmere, and of securing the complete protection of the catchment basins of the larger tanks.

* No. 746F., dated the 22nd August 1881.

3. The fencing of the reserves and their efficient protection are matters of the first importance. The length of fence existing is not stated in the report; but it is explained, in paragraph 24, that, with a small addition of 5,813 feet, which was made during 1879-80, the total length has remained the same during the year. The length of fencing along the boundaries of the new Dewair and Danta Reserves should be given, and the entire length of fencing completed should be correctly stated in the report for 1881-82.

4. It is noticed that as many as nine fires occurred in the forest during the year, those in the tracts of Merwara, and especially in Todgarh, being the most extensive and destructive. This is to be regretted; but the Governor General in Council accepts your assurance that the Commissioner is fully alive to the importance of vigilance and sustained effort in the matter of fire protection, and that steps have been taken to widen and improve the fire-traces.

5. The number of prosecutions for breaches of Forest rules again shows a diminution. The decrease in offences in the present year seems from the table to be attributable to a falling off in the number of cases of illegal cutting of firewood, and this is ascribed by the Assistant Commissioner to the more careful supervision exercised, and to the fact that almost all the dry wood was sold. The number of cases of prosecution for cattle trespass remained the same, but the number of cattle impounded was 614 in excess of that reported last year. This is, however, entirely accounted for by the additional area taken up as State forest. In the older tracts there was a large decrease in the number of cattle impounded, which is satisfactory evidence that the people now take more care to keep their cattle out of the reserves.

6. Plantation operations during the year were limited, owing to the unfavourable rainy season, and the outlay under this head was only Rs. 1,223. The total amount expended on this account since the beginning of Forest Administration in the province has amounted to Rs. 34,629; and there is every reason to believe that the money has been well laid out.

7. In paragraph 44 of the Report it is said that the plants at the Beawar nursery do not flourish, and that the seeds do not freely germinate owing to the water being brackish. Should this be the case, the nursery might perhaps with advantage be removed to a more favourable site, as suggested by the Forest Ranger.

Experiments in coppicing are reported, but, unless the particular species is mentioned, it is not possible to estimate the value of the results attained.

8. The following figures shew the financial results of the year, which were very similar to those of 1879-80 :—

		Rs.	Rs.
Receipts	.. ..		1,124
Charges	A. Conservancy and Works ...	4,755	
	B. Establishments	7,668	
			12,423
	Deficit		11,299

There was a smaller income from fines and from the sale of firewood; but this was more than counterbalanced by savings in expenditure under "Communications and Buildings" (A. VII), "Plantations" (A. VIII, *d*) and "B. Establishments."

It cannot of course be expected, for some time to come, that these dry, hilly regions, which have only been under Forest Conservancy during the last few years, should yield a sufficient outlay to cover their working expenses. On the other hand, the prospective benefit to the country from the operations now in progress is very great, and these forests are already a source of convenience to the people, who obtain from them *gratis* large supplies of fodder. This form of return cannot be shewn as a cash income, but it is nevertheless valuable. The Governor General in Council is glad to notice that endeavours are being made to render the reserves more and more useful to the people in this respect.

9. In conclusion, I am to invite attention to Form No. 46, "Area of plantations," appended to the report, in which the figures of the opening column, shewing the total cost on the 1st April 1880, do not agree with the closing figures in the previous report. The totals are as follows :—

	1879-80. On 31st March 1880.			1880-81. On 1st April 1880.		
	Rs.	A.	P.	Rs.	A.	P.
Out of the area taken up under the Regulation ...	20,310	8	2	30,733	11	9
Tracts not taken up under the Regulation ...	845	11	0	2,672	11	2
Total plantations ...	21,156	3	2	33,406	6	11
Nurseries ...	9,304	2	4	500	0	0
Grand Total ...	30,460	5	6	33,906	6	11

The discrepancy is not explained, but is probably due to more correct figures having been received after submission of the report for 1879-80. I am to suggest that all differences between the opening balance of one year and the closing balance of the year previous may invariably be accounted for in the annual report.

No. 920F.

COPY of the above, with copy of the report, forwarded to the Government of the North-Western Provinces and Oudh, for communication to the Conservator of Forests of the School Circle.

No. 921F.

COPY of the above, with a copy of the report, forwarded to the Foreign Department for information.

Original papers returned.

G. C. P. Press Simla,—No. 581 H. D.—10-10-81.—310.

AJMERE FOREST REPORT FOR 1880-81.

No. 2113S., dated the 10th August 1881.

From—MAJOR J. P. STEEL, R.E., Secretary to Agent, Governor-General, and Chief Commissioner, Ajmere,

To—The Secretary to the Government of India, Home Department.

I AM directed by the Chief Commissioner to submit the annual report of Forest Administration for 1880-81, together with his review thereof.

Extract from the Proceedings of the Chief Commissioner of Ajmere in the Public Works Department,—(No. 2113S., dated the 10th August 1881).

Read—

The Administration Report of the Ajmere and Merwara Forests for the year 1880-81.

RESOLUTION.—The area of reserved forests was increased during the year by 13,447 acres, of which 12,203 acres lay in the extreme southern portion of Merwara in the Abu direction, and 1,244 acres in the catchment of the Danta tank near Nusseerabad. The total area stood at the close of the year at 77,875 acres, or 121·6 square miles. Of this area 382 acres have been under plantation, though not yet fully stocked.

2. There was, besides the above total area of reserved forests, a small area of 35 acres, not taken up under the Forest Regulation of 1874, on which nursery and plantation operations have been carried out.

3. The demarcation and marking of boundaries was all completed last year. The expenditure on fencing amounted this year to only Rs. 46-4-3, which was all on repairs. The total length of fences and of unfenced boundaries has not been stated. This information having been required by the Government of India, in their orders on the last report, the Commissioner should have taken timely steps to obtain it, and this should now be done as early as practicable.

4. This year proved an extremely unfavourable one for fire protection. There were nine conflagrations, the more extensive and destructive ones being all in the Merwara tracts, and especially in the Todgarh, the largest of them. Altogether an area of 973 acres was affected. This, though large compared with the results of the previous years, is not more than 1½ per cent. of the total area. The Commissioner is fully alive to the importance of fire protection, and endeavours will continue to increase the protection as far as practicable. During the year, the fire lines have been both improved and increased, and the establishment was also strengthened.

5. The number of Forest offences has again diminished, notwithstanding the addition to the area. This is no doubt the effect of time, as will be seen from the details given in paragraph 11 of the Commissioner's report regarding cattle trespasses in the several tracts. The cattle impounded in the Rajaosi tract taken up five years ago numbered 14, while in that of Danta, very nearly equal in area and acquired last year, the number was 235. So also, though the areas of the Todgarh and Dewair tracts are relatively 3⅓ to 1, the number of cattle impounded thereon was 1 to 1½ respectively. It may be inferred from this that at the commencement the villagers must find considerable difficulty in keeping their cattle off the grazing ground to which they had been accustomed for years, especially when the tract is not fully fenced.

6. The year was far from favourable for plantation work, and the results secured were not therefore satisfactory.

7. The results of the small felling undertaken this year in the Todgarh tract have not been favourably spoken of. The information given in the report is not sufficient to enable a judgment to be formed about this important matter. There exists in both Ajmere and Beawar a very large demand for fuel and grass.

Firewood is now sold at Ajmere at 1¼ maunds per rupee. It is not much cheaper at Nusseerabad, and if wood be available for felling, a good market will not be wanting. The subject will no doubt receive due attention.

8. The financial results of the year's work were as follow:—

	Rs.	A.	P.
Receipts	1,124	4	9
Expenditure	12,423	1	5
Deficit ...	11,298	12	8
Deficit for 1879-80 ...	11,889	3	6

The revenue has decreased by Rs. 736-8-4 compared with that of the last year. This falling off was, it is explained, due to less charcoal and wood having been sold this year.

9. The possibility of any return for the expenditure of Rs. 34,629-8-10 incurred on plantations is still remote, and at present fines form the main source of income.

10. The sale proceeds of grass of certain tracts were hitherto credited to the District Nazul Fund. This income will be in future brought to the credit of the Forest revenue, and the receipts may be expected to improve by about Rs. 600 to Rs. 1,000 per annum.

11. The reserves have been inspected by Messrs. Moir and Fernandez, deputed by the Conservator of Forests, School Circle, North-Western Provinces. Their report, with the Conservator and the Commissioner's opinion thereon, will be awaited.

12. On the whole, the Officiating Chief Commissioner observes with satisfaction that Forest conservancy is making steady progress in Ajmere and Merwara, where this important branch of administration was so long neglected. Colonel Walter believes that if the Commissioner and his assistants continue to take the same intelligent interest in this branch of their duties, the example cannot fail to have some good effect on the neighbouring proprietors and even on the surrounding States.

ORDER.—Ordered, that a copy of this Resolution, together with the Commissioner and Conservator's report in original, be submitted to the Government of India under cover of a separate letter.

Ordered also, that this Resolution be communicated to the Commissioner and Conservator, Ajmere and Merwara.

No. 54F., dated the 23rd July 1881.

From—L. S. SAUNDERS, Esq., Commissioner and Conservator of Forests, Ajmere and Merwara,

To—The Secretary to the Chief Commissioner, Ajmere, in the Public Works Dept.

I HAVE the honor to submit the annual progress report on the administration and working of the forests in Ajmere and Merwara for the year 1880-81.

RESERVED FOREST TRACTS.

Area.

2. During the year under review two tracts, *viz.*, Dewair and Danta, comprising an area of 12,203 and 1,244 acres respectively, were added to the tracts reported upon last year. The area at the close of the year stood as follow:—

		Acres.
Ajmere	Mohwa and Madar Hill	2,812
	Nagpahar	2,660
	Taragarh Valleys	1,016
	Srinagar and Bir	3,575
	Rajaosi	1,260
	Danta	1,244
	Total	12,567
Merwara	Chang	2,341
	Hattun and Sheopura	1,920
	Biliawas and Taragarh	3,172
	Todgarh and Barakhan	40,048
	Dilwara and Chang Birs	235
	Borwat and Kotra	3,923
	Auspahar	1,466
	Dewair	12,203
	Total	65,308
	Grand Total	77,875

3. The two tracts newly taken up were demarcated in 1879-80, as mentioned in paragraph 2 of the report for 1879-80, but notifications under the Forest Regulation were only issued during the year.

The Dewair tract is situated at the extreme southern point of our district, in the Abu direction.

The Danta reserve is situated between Ajmere and Nussecrabad.

Protection and Improvement.

Establishment.

4. In accordance with the proposals contained in Dr. Brandis' "Suggestions," dated the 1st November 1879, the establishment was reorganised and made permanent from the 1st November 1880, under the sanction of the Government of India, communicated in letter No. 177F., dated the 17th February 1881. The strength and cost, as compared with the preceding year, is shown below:—

		Number.		Actual cost.	
		1879-80.	At close of 1880-81.	1879-80.	1880-81.
				Rs.	Rs.
Sub-Assistant Conservator—Supervising ...		1	*...	2,400	1,797
Clerk	Office	1	1	1,498	1,415
Munshi	Office	1	1		
Chaprasis	Office	3	2		
Forest Ranger	Forestry	...	1	3,234	3,526
Foresters	Forestry	5	6		
Forest guards	Forestry	32	31		
Total ...		43	42	7,132	6,738

* For 8¼ months only.

5. This shews a decrease of Rs. 394, which is principally due to the substitution of a Forest Ranger for a Sub-Assistant Conservator.

6. Mahomed Anwar Khan, the late Sub-Assistant Conservator, obtained one year's furlough, with effect from the 21st December last, and his pay was reduced from Rs. 200 to Rs. 150 by order of the Government of India, from the 1st October 1880.

7. Ranger Sahib Roy was, on the recommendation of Captain Bailey, transferred from the School Circle on Rs. 70 per mensem, and put in charge of the Merwara Forests from the 21st December 1880.

Breaches of Forest Rules.

8. The different offences compared with last year are shown in the following statement:—

	1879-80.	1880-81.	Increase.	Decrease.
Injury to forests by fire ...	2	2	...	...
Unauthorised felling or appropriation of wood and minor produce.	99	63	...	36
Grazing without permission ...	14	13	...	1
Other offences	1	2	1	...
Total	116	8	...	36

9. In Ajmere considerable decrease is observed under "unauthorised felling," &c. This the Assistant Commissioner reports is due to more careful supervision, and also, as the dry wood was sold, there was little left to be stolen.

10. The number of persons prosecuted in 80 cases was 285, against 290 persons and 116 cases reported last year. In 60 cases involving 122 persons convictions were obtained.

11. The following table shows the number of cattle impounded, with the receipts from the Pound Fund which have been credited to the Forest Department for the year 1880-81 :—

	Name of tracts.	Number of cattle impounded.		Half the income from fines on cattle impounded.					
		1879-80.	1880-81.	1879-80.			1880-81.		
		No.	No.	Rs.	A.	P.	Rs.	A.	P.
Ajmere	Mohwa Madar Hill	425	354	33	8	0	31	0	6
	Nagpahar	446	224	48	2	6	38	11	0
	Taragarh Valleys	150	330	18	8	0	28	0	0
	Srinagar Bir	510	548	43	10	6	102	8	0
	Rajaosi	85	14	10	7	0	1	11	0
	Danta	...	235	...			12	1	6
	Total ...	1,616	1,705	154	4	0	214	0	0
Merwara	Chang	233	203	36	0	0	41	8	0
	Hattun	93	10	7	7	6	1	4	0
	Biliawas	92	106	5	13	0	12	3	6
	Todgarh	1,860	1,321	147	0	0	129	0	0
	Beawar Nursery	52	37	5	5	0	4	3	0
	Dilwara and Chang Birs ...	156	288	18	15	6	23	9	0
	Borwar and Kotra	159	149	15	6	6	13	2	6
	Anspahar	4	148	0	8	0	4	10	0
	Dewair	...	912	...			54	4	6
	Total ...	2,649	3,174	236	7	6*	283	12	6
	Grand Total ...	4,265	4,879	390	11	6	497	12	6

12. The number of cattle impounded in all the reserves was 614 in excess of last year, but the two new tracts account for 1,147 extra cattle. Consequently there were in the old tracts actually a decrease of 533 impounded cattle, and this notwithstanding that grass was deficient owing to the scanty rainfall. The income from this source rose by Rs. 107-1-0.

Fire protection.

13. The cost of fire protection during the last two years ending the 30th June 1881 was—

	Name of tracts.	1879-80.			1880-81.		
		Rs.	A.	P.	Rs.	A.	P.
Ajmere	Mohwa and Madar Hill	27	0	0	28	11	6
	Nagpahar	16	0	0	41	14	0
	Taragarh Valleys	41	2	0	52	15	3
	Srinagar	38	8	6	26	0	0
	Rajaosi	52	9	7	34	15	0
	Total ...	175	4	1	184	7	9
Merwara	Chang	...			15	13	6
	Biliawas and Taragarh	53	10	6	37	5	0
	Todgarh and Barakhan	530	6	3	655	7	4
	Anspahar	76	1	6	72	7	0
	Dewair	...			173	14	0
	Total ...	660	2	3	954	14	10
	Grand Total ...	835	6	4	1,139	6	7

Note.—Rs. 244-6 shown in last year's report as being due from the Merwara Pounds was entered by mistake of the Sub-Assistant Conservator; it should have been Rs. 236-7-6.

14. The sum of Rs. 184-7-9 spent in Ajmere includes—

1 Nagpahar.
1 Taragarh Valleys.
1 Srinagar.
1 Rajaosi.

	Rs.	A.	P
Pay of 4* extra fire-watchers entertained during dry season	90	1	0
Rewards to the villagers who rendered assistance in extinguishing fires	51	11	6
Constructing fire-lines	42	11	3
Total ...	184	7	9

15. The sum of Rs. 954-14-10 expended in Merwara includes Rs 235-1-6 on account of burning fire-lines in the preceding year, spent irregularly by Sub-Assistant Conservator Mahomed Anwar Khan without obtaining previous sanction.

16. Rupees 70-13-4 were spent on account of pay of six extra fire-watchers entertained in Todgarh, leaving Rs. 619 as the actual cost of burning and clearing fire-lines in the year under report.

17. The number and length of fire-lines constructed in each tract, together with the cost thereof, is as follow :—

Name of tract.		Number of fire-lines constructed.	Length of fire-lines. Miles.	Length of fire-lines. Feet.	Cost. Rs.	A.	P.
Ajmere	Taragarh Valleys ...	2	...	5,280	9	14	3
	Nagpahar	2	2	2,250	19	14	0
	Rajaosi	2	6	2,620	12	15	0
	Total ...	6	8	4,870	42	11	3
Merwara	Chang	1	2	440	15	13	6
	Anspahar	3	7	4,165	58	12	0
	Biliawas	2	5	1,156	34	6	0
	Todgarh	8	52	1,034	364	7	6
	Dewair	3	16	70	173	11	0
	Total ...	17	83	1,885	649	0	0
Grand Total ...		23	93	1,475	691	11	3

18. In Ajmere the fire-lines burnt were 100 feet wide, and the average rate per mile fell at Rs. 4-4-9. The fire-lines in the Nagpahar and Rajaosi tracts were constructed for the first time.

19. In Merwara the breadth of the fire-lines constructed this year was increased from 40 feet to 150 feet, the cross lines being burnt only 100 feet wide.

20. The cost of burning and clearing these fire-lines falls at Rs. 7-13-0 per mile. Messrs. Moir and Fernandez estimated the cost of constructing fire-lines at Rs. 5 and Rs. 3 per mile, in paragraph 64 of their late inspection report and it does not appear that the late Sub-Assistant Conservator studied economy as much as he should have done.

21. Nine conflagrations occurred during the year; details are given below :—

Date on which fire occurred.	Name of tract.	Total area.	Area affected by fire.	Percentage of area affected to total area.	Number of Forest guards.	Number of Fire-watchers.	Area per Forest guard and watcher.
		Acres.	Acres.	Acres.	No.	No.	Acres.
3rd October 1880 ..	Rajaosi	...	·3	·02	2	1	420
12th February 1881 .		1,260	·03	·002			
16th November 1880..	Pushkarbagh (Nagpahar) ...	2,260	2	·07	2	1	886·6
17th " " ...	Mohwa Bir	2,812	...	...	2	...	1,406
11th " " ...	Todgarh		54	·13	6	6	3,337·4
13th April 1881 ...		40,048	107	·26			
28th " " ...			520	1·29			
2nd February 1881 ...	Dewair	12,203	173	1·41	2	...	6,101·5
7th March 1881 ...	Borwar and Kotra ..	3,923	117	2·98	3	...	1,307·6

22. The details of these fires have been, or will be, reported upon in due course. The fires were principally caused by negligence of passers-by. In one case the fire came across our border from Marwar.

23. The fire-lines have been doubtless a great safeguard, and now that they have been further widened, they will prove still more useful. We are fully alive to the fact that each year fires become more destructive as the forests become thicker and thicker, and greater precautions become annually more necessary.

Fencing and other works.

24. The length of fencing was given in detail in paragraph 19 of our report for 1878-79. Since then, 5,813 feet of fencing has been constructed. The exact length of the boundaries of the Danta and Dewair tracts is not known, but in next year's report an amended account of fencing shall be given. There was no expenditure for fencing this year in Ajmere, and only Rs. 46-4-3 were spent in Merwara in repairing some of the dry stone walling in Todgarh and the cactus fencing in the Dilwara and Chang Birs.

25. The bunds constructed in March 1880 in the Taragarh Valleys and Rajaosi tract have not given good results as yet, probably owing to the scanty rainfall. The work is, however, of a satisfactory nature, as it has caused the deposit of a large quantity of silt.

Inspection paths.

26. The inspection paths in Ajmere were in passable order and needed no repairs.

27. In Merwara Rs. 50-4 were spent in constructing a path 2 miles long in the Todgarh tract along the fire-line. The full length will be completed when funds are available.

Buildings.

28 No buildings were constructed, and only Rs. 36-4-1 was spent on petty repairs to buildings in the Ajmere forests.

Plantations.

29. The following statement gives the total expenditure on plantations from the commencement, up to the close of the year 1880-81, the proportionate charges of nursery expenses having been distributed among the various tracts :—

	Name of Plantation.	Expenditure up to the 31st March 1880 — Actual expenditure.			Expenditure up to the 31st March 1880 — Proportionate charges of nursery expenses.			Expenditure during 1880-81. — Actual expenditure.			Expenditure during 1880-81. — Proportionate charges of nursery expenses.			Total.		
		Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Ajmere.	Mohwa and Madar Hill ...	5,241	2	3	2,491	2	10	104	7	10	7	9	2	7,844	6	1
	Nagpahar .	5,609	1	2	2,723	8	8	135	0	0	7	0	4	8,474	10	2
	Taragarh Valleys	5,679	1	3	2,758	1	10	302	4	0	93	3	9	8,832	10	10
	Srinagar Bir ..	604	9	2	210	10	4	84	4	2	7	8	3	906	15	11
	Shikast Masjid ..	845	11	0	327	0	2	64	1	8		...		1,236	12	10
	Total ...	17,979	8	10	8,510	7	10	690	1	8	115	5	6	27,295	7	10
Merwara.	Chang ...	820	13	7	641	8	11	55	11	7	13	11	7	1,531	13	8
	Hatttun and Shoopura ...	792	11	5	605	6	4	57	5	11		...		1,455	7	8
	Todgarh ...	493	12	10	408	15	1	56	8	5		...		959	4	4
	Biliawas ...	552	9	6	372	3	4	39	0	2		...		963	13	0
	Dilwara and Chang Birs .	516	11	0	211	10	3	73	7	5	28	2	1	829	14	9
	Parade plantation		...		1,500	0	0	80	0	0	13	11	7	1,593	11	7
	Total ...	3,176	10	4	3,739	11	11	362	1	6	55	9	3	7,334	1	0
		21,156	3	2	12,250	3	9	1,052	3	2	170	14	9			
	Grand Total ...	33,406 6 11						1,223 1 11						34,629	8	10

30. The actual expenditure during the year under review has been Rs. 1,052-3-2, a decrease of Rs. 344-10-5, Rs. 1,396-13-7 having been spent during 1,879-80. Planting operations were limited owing to bad and insufficient rains.

31. Of the 5,868 trees still living, reported last year, 480 have died during the hot season. 2,613 trees were planted out in the rains, of which 912 died in the cold season, leaving 7,089* under maintenance.

Ajmere ...	3,946
Merwara ...	3,143
	7,089

32. The area covered by plantations is 396 acres, as detailed in Form No. 46. The area of the Beawar Parade plantation has now been shown separately from that of the Beawar nursery, and included in plantations. Out of 24 acres of the Parade plantation, 16 acres were given to the Rev. W. Shoolbred, leaving only 8 acres in charge of the department.

33. The Carob trees are doing well and have made fair progress; they vary from 13 feet to 14 feet in height.

34. In Ajmere 7 plants of Pithecolobium Saman, 25 of Mesquit bean and 32 of Bamboo were transplanted from the nursery into the several tracts.

35. In Merwara 22 plants of Mesquit bean were planted out in the Dilwara and Chang Birs.

36. The cost of the nursery amounted in Ajmere to Rs. 1,893-9-5, and in Merwara to Rs. 240-15-8.

37. The old nursery at Ajmere was situated so far from the station that it could not be efficiently inspected. Some land has now been purchased for Rs. 1,662-9-0, in a more convenient position.

38. Four thousand five hundred and fifty-three trees have been sent out from the Ajmere nursery: 2,285 were planted in Government tracts, and 396 were given *gratis* to applicants and sold; the rest were planted along the roads.

39. One thousand four hundred and twenty-two trees were given out from the Beawar nursery: 328 have been planted in Government plantations, and 32 were given *gratis* to applicants; the rest have been planted out on the roads.

40. Several sorts of seeds were sown during last rains, which produced 21,957 seedlings. Out of this 9,515 died in the cold weather, leaving 6,018 plants fit for transplanting and 6,424 still unfit.

41. Five chittacks of *Pinus longifolia* seeds produced 150 seedlings, out of which 99 died, leaving 51 alive.

42. From two chittacks of *Dodonæa viscosa* seeds sown in July last 150 seedlings were obtained, but only 40 survived.

43. *Carissa diffusa* and *Cupressus torulosa* were sown, but did not germinate.

44. The water in the Beawar nursery is said to be brackish; the plants consequently do not flourish well, and seeds do not germinate properly. The Forest Ranger suggests the transfer of the nursery to the Dilwára Bir, which proposal is deserving of consideration.'

Sowing Operations.

45. The actual cost of sowing operations in Ajmere amounted to Rs. 23-4-3, and in Merwara to Rs. 20-1-10.

46. Seeds of various sorts were thrown broadcast, and also sown by the plough and small hand spades during last rains, many of which are reported to have germinated fairly well.

47. Out of the 82 trees cut experimentally, to see their coppicing powers in the Dadalia jungle of the Todgarh tract in December 1878, 70 trees are reported to have coppiced well, varying from 4 to 5 feet in height.

48. Of the 80 trees cut in July 1879 in Bagri and Chipi Devi 75 coppiced, and now vary in size from 2 to 3 feet. A few of them have been damaged by animals.

Felling Operations.

49. An experimental felling of Dhaukra in a patch measuring one acre was made this year in the Todgarh tract at a cost of Rs. 10-5-6.

50. Messrs. Moir and Fernandez selected an area of about 600 acres west of Bagri, this area being naturally divided into three compartments, each having an independent export line, which will enable them to be cut simultaneously or one after another as necessity may require. Rs. 13-4 were realised from sale proceeds of ballis and dandas, &c., obtained in felling trees.

51. The firewood still remains unsold, valued at Rs. 33-6. The net profit of felling in one acre can only thus be estimated at about Rs. 36-5-6, and it does not therefore appear to be worth while to continue felling at present.

Requirements of the Zamindars.

52. Two thousand one hundred and ten dandas, ballis and dry trees were given to the zamindars from the Todgarh tract, and 140 from the Chang tract, for household and agricultural requirements.

53. Grass was freely cut in the tracts of Ajmere and Merwara by the villagers, from December to the end of May.

Financial Results.

54. The receipts and expenditure as compared with the preceding year stand as follow:—

Main heads.		1879-80.			1880-81.		
		Rs.	A.	P.	Rs.	A.	P.
Receipts	... ...	1,860	13	1	1,124	4	9
Expenditure	A.—Conservancy and Works	5,280	6	3	4,755	6	3
	B.—Establishments	8,169	10	4	7,667	11	2
	Total expenditure . .	13,750	0	7	12,423	1	5
Deficit ...	... ...	11,889	3	6	11,298	12	8

55. The receipts show a decrease of Rs. 736-8-4 on the previous year, especially under the heads I(*b*)—"Firewood and Charcoal" and V(*a*)—"Fines and Forfeitures"

Last year the sale of firewood and charcoal supplied for the Viceroy's camp brought Rs. 644. This was an exceptional item of receipt. The fines inflicted have also been less this year.

56. The expenditure also shows a decrease, *viz.*, of Rs. 1,326-15-2, which is due to savings under heads "Communications," "Plantations," and "Establishments," showing that general economy has been exercised.

57. In future the revenue will be considerably increased by the income on account of grass from the Nagpahar and Mohwa Bir tracts, which hitherto had been credited to the Nazul Fund, but has now been ordered to be credited to Forest revenues.

58. A forecast amounting to Rs. 84,000, for the five years ending 31st March 1885, prepared on the basis of Dr. Brandis' proposal contained in paragraph 138 of his suggestions on the Ajmere and Merwara Forest administration, was submitted in June last, and has been approved by the Local Government (*vide* No. 1690S., dated the 24th June 1881).

General Remarks.

59. The year was an unfortunate one for forest progress. The rainfall was deficient in most places, but more particularly so in Merwara, where most of our important reserves are situated; and notwithstanding increased vigilance against the danger of fires and a large increase to the width and length of fire-lines hitherto burnt, some of the most destructive fires we have yet had occurred. This was no doubt owing in a great measure to the dryness of the year.

60. We have endeavoured to make the reserves more useful to the people this year, as was suggested in paragraph 6 of the letter from the Secretary to the Government of India, Home Department, No. 663, dated the 12th October 1880, which reviewed our report of last year; and beasts of burden have been allowed to enter the reserves to carry away grass which had been cut by the villagers. In places where it is feasible we are going to make short cart roads into the tracts, to enable the grass to be carried away still more easily; and with reference to the remarks which were made as to the surreptitious grazing (as evidenced by the large amount of impounded cattle), I have called upon the Assistant Commissioners to ascertain from what direction these trespasses usually occur and to what villages or people most of these cattle belong, so that I hope, by either extending our fencing where it is found to be deficient, or by special measures if the trespass is wilful, to prevent such large trespassing in future. I have also directed the Assistant Commissioners to report whether the grazing lands of the villagers who may be proved to be the principal trespassers are deficient or not. At the time of writing this report the answers to this call for information had not been received, but the matter shall not be lost sight of.

61. The principal event of the year has been the inspection of the reserves by two officers, Mr. Moir and Mr. Fernandez, who were deputed to examine them professionally and make suggestions. Their report was carefully considered and gone over with me by Captain Bailey, R.E., Conservator of Forests, School Circle, North-Western Provinces, who has been appointed as our professional adviser on forest matters; and a copy of the report with his memorandum was received with his No. 401, dated the 14th July 1881, and will be submitted shortly for the orders of the Local Government. It is sufficient here to say that the various suggestions will have our careful attention, and that the opinion of the inspecting officers, so far as it can be gathered from their detailed report, certainly is that considerable progress in Forest conservation has taken place in the last few years, and that the expenditure has been efficiently and effectively supervised.

62. During the year Major Lassalle and Captain Robertson, Assistant Commissioners, have again respectively been in charge of the Forest Reserves of Ajmere and Merwara, and have exerted themselves in a most creditable way to see that every thing was done to forward Forest conservancy. They are both officers who take an intelligent interest in this portion of their work.

Munshi Chuttan Lal, Superintendent of Ajmere Tanks and Forests, has also done well, and is to be commended. Ranger Sahib Roy relieved Sub-Assistant Conservator Mahomed Anwar Khan on the 21st December 1880. From what I have seen and heard of him I have every belief that Forest conservation will not suffer from this exchange of officers.

Annual Form No. 45.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Reserved Forests, 1880-81.

Division or Range.	Name of Forest	Area on 1st April 1880.		Added during the year		Excluded or transferred to other heads.		Total on 31st March 1881.		No. and date of Notification of additions and transfers, &c.	Remarks.
		Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.	Square miles.	Acres.		
AJMERE ...	Mohwa & Madar Hill	4	2,812	...	...	...	...	4	2,812		
	Nagpahar	4	2,660	...	...	...	...	4	2,660		
	Taragarh Valleys	2	1,016	...	...	...	...	2	1,016		
	Srinagar & Bir	6	3,575	...	...	...	...	6	3,576		
	Rajaosi	2	1,260	...	...	...	...	2	1,260		
	Danta	...	...	2	1,244	...	...	2	1,244	No. 1798S., dated the 6th July 1880.	
	Total	18	11,323	2	1,244	...	...	20	12,567		
MERWARA ...	Chang	4	2,341	...	...	...	...	4	2,341		
	Hattun & Sheopura	3	1,920	...	...	...	...	3	1,920		
	Biliawas & Taragarh	5	3,172	...	...	...	...	5	3,172		
	Todgarh & Barakhan	63	40,048	...	...	...	..	63	40,048		
	Dilwara & Chang Birs	...	235	...	...	...	...	...	235		
	Borwar & Kotra	6	3,923	...	...	...	...	6	3,923		
	Anspahar	2	1,466	...	...	...	...	2	1,466		
	Dewair	...	..	19	12,203	...	...	19	12,203	No. 1656 S. dated the 24th June 1880.	
	Total ...	83	53,105	19	12,203	...	.	102	65,308		
	Grand Total	101	64,428	21	13,447	...	...	122	77,875		

Annual Form No. 46.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Plantations, 1880-81.

Division.	Name of Plantation.	On 1st April 1880.				During 1880-81.				On 31st March 1881.			
		Area.	Total cost.			Area added.	Cost.			Total area.	Total cost.		
	Out of the area taken up under the Regulation.	Acres.	Rs.	A.	P.	Acres.	Rs.	A.	P.	Acres.	Rs.	A.	P.
Ajmere ...	Mohwa and Madar Hill	83	7,732	5	1	..	112	1	0	83	7,844	6	1
	Nagpahar	23	8.332	9	10	1	142	0	4	24	8,474	10	2
	Taragarh Valleys	98	8.437	3	1	...	395	7	9	98	8,832	10	10
	Srinagar Bir	8	815	3	6	..	91	12	5	8	906	15	11
	Total ..	212	25,317	5	6	1	741	5	6	213	26,058	11	0
Merwara ...	Chang tract	15	1,462	6	6	...	69	7	2	15	1,531	13	8
	Hattun and Sheopura	30	1,398	1	9	...	57	5	11	30	1,455	7	8
	Biliawas and Taragarh	12	924	12	10	...	39	0	2	12	963	13	0
	Todgarh and Barakhan	46	902	11	11	...	56	8	5	46	959	4	4
	Dilwara and Chang Birs	66	728	5	3	...	101	9	6	66	829	14	9
	Total ...	169	5,416	6	3	..	323	15	2	169	5,740	5	5
	Grand Total ..	381	30,733	11	9	1	1,065	4	8	382	31,799	0	5
	Area not taken up under the Regulation.												
Ajmere ...	Shikast Masjid	6	1,172	11	2	...	64	1	8	6	1,236	12	10
Merwara ...	Pargde Plantation	24	1,500	0	0	—16	93	11	7	8	1,593	11	7
	Total ...	30	2.672	11	2	—16	157	13	3	14	2,830	8	5
	Total Plantations ..	411	33,406	6	11	—15	1,223	1	11*	396	34,629	8	10
	Nurseries.												
Ajmere .	Ajmere Nursery	1	300	0	0	9	1,662	9	0	10	1,962	9	0
Merwara ...	Beawar „	4	200	0	0	...	...			4	200	0	0
	Total Nurseries ...	5	500	0	0	9	1,662	9	0†	14	2,162	9	0

Remarks.

	Rs.	A.	P.
* Expenditure under A. VI, b.	7	0	11
A. VIII, d. ...	1,045	2	3
Proportionate charges of Nursery expenses .	170	14	9
Total	1.223	1	11
† Expenditure under A. VI, b.	0	4	5
A. VIII, b. ...	1,662	9	0
A. VIII, d. ...	471	11	8
Total	2.134	9	1
Deduct—Share of expenses spread over various plantations, Rs. 170 14 9			
Written up to profit and loss for plants supplied gratis, Rs. 301 1 4	472	0	1
	1,662	9	0

Form No. 47.—[*Suggested.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Forest Tracts protected from fire during the dry season of 1881 (*to accompany report,* 1880-81).

Division.	Forest Tracts.	Up to 30th June 1880.		During dry season of 1881.				Total cost up to the 30th June 1881.	Year when protection commenced.	Remarks.
		Area actually protected.	Total cost.	Area attempted to be protected.	Failures.	Area actually protected.	Amount expended.			
		Acres.	Rs. A. P.	Acres.	Acres.	Acres.	Rs. A. P.	Rs. A. P.		
Ajmere ...	Mohwa Madar Hill	2,718	27 0 0	2,812	...	2,812	28 11 6	55 11 6	...	
	Nagpahar	2.660	31 0 0	2,660	2	2,658	41 14 0	72 14 0	1880	
	Taragarh Valleys	1,015	193 10 1	1,016	...	1.016	52 15 3	246 9 4	1874	
	Srinagar Bir	3,574½	38 8 6	3.575	...	3,575	26 0 0	64 8 6	1880	
	Rajassi	1,100	52 9 7	1,260	·33	1259·67	34 15 0	87 8 7	"	
	Total ...	11,067½	342 12 2	11,323	2·33	11320·67	184 7 9	527 3 11	...	
Merwara ...	Chang	2,341	...	2.341	...	2.341	15 13 6	15 13 6	1881	
	Hattun and Sheopura	1,920	.	1,920	...	1,920	...	...	.	
	Biliawas and Taragarh	3.172	447 12 0	3,172	...	3,172	37 5 0	485 1 0	1874	
	Todgarh and Barakhan	38,392	2,674 2 11	40,048	681	39,367	655 7 4	3,329 10 3	"	
	Dilwara and Chang Birs	235	...	235	...	235	...	...	...	
	Borwar and Kotra	3,920½	..	3,923	117	3,806	..	...	..	
	Anspahar	1,466	188 15 6	1.466	...	1,466	72 7 0	261 6 6	1877	
	Dewair tract	...	...	12,203	173	12,030	173 14 0	173 14 0	1881	
	Total ..	51,446½	3,310 14 5	65.308	971	64.337	954 14 10	4,265 13 3	...	
	Grand Total ...	62.514	3,653 10 7	76.631	973·33	75657·67	1,139 6 7	4,793 1 2	...	

Charged in previous years ..	3,537 6 6
Charged in 1880-81	1,144 12 4
Charged in 1881-82	110 14 4
Total ..	4.793 1 2

Annual Form No. 48.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Prosecutions for Breaches of Forest Rules, 1880-81.

Forest Division and Civil District.	Injury to forests by fire.		Unauthorised felling or appropriation of wood and minor forest produce.		Grazing without permission or in tracts in which grazing is prohibited.		Other Offences.		Total.				Remarks.
									Prosecutions.		Convictions.		
	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Ajmere	2	4	50	118	1	1	2	2	55	125	48	95	
Merwara	...	...	13	130	12	30	...	...	25	160	12	27	
Total ...	2		63	248	13	31	2	2	80	285	60	122	

Annual Form No. 49.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE—MERWARA.

Summary of Revenue and Expenditure for 1880-81.

Budget Heads.	Rs.	A.	P.
REVENUE.			
I.—Timber and other produce removed from the forests by Government agency—			
a. Timber	...		
b. Firewood and charcoal	13	4	0
c. Bamboos	...		
d. Sandal-wood	...		
e. Grass and other minor produce	...		
II.—Timber and other produce removed from the forests by consumers or purchasers—			
a. Timber	...		
b. Fire-wood and charcoal	310	15	6
c. Bamboos	...		
d. Grazing and fodder grass	197	1	9
e. Other minor produce	91	9	3
III.—Confiscated drift and waif wood	0	4	9
IV.—Revenue from forests not managed by Government—			
a. Duty on foreign timber and other forest produce	...		
b. Revenue from shared and private forests	...		
V.—Miscellaneous—			
a. Fines and forfeitures	511	1	6
b. Refunds	...		
c. Other sources	...		
Total Revenue ...	1,124	4	9
EXPENDITURE.			
A.—Conservancy and Works.			
I.—Timber and other produce removed from the forests by Government agency—			
a. Timber	...		
b. Fire-wood and charcoal	18	2	6
c. Bamboos	...		
d. Sandal-wood	...		
e. Grass and other minor produce			
II.—Timber and other produce removed from the forests by consumers or purchasers	15	7	8
III.—Confiscated drift and waif wood—	...		
IV.—Revenue from forests, not managed by Government—			
a. Duty on foreign timber and other forest produce	...		
b. Revenue from shared and private forests	...		
V.—Rent of leased forests, and payments to shareholders in forests managed by Government.			
VI.—Live Stock, Stores, Tools and Plant—			
a. Purchase of cattle	32	0	0
Feed and keep of cattle	7	5	4
c. Stores, tools and plant	45	7	0
Carried over ...	118	6	6

Annual Form No. 49.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Summary of Revenue and Expenditure for 1880-81—contd.

Budget Heads.	Rs.	A.	P.
EXPENDITURE—contd.			
Brought over ...	118	6	6
VII.—Communications and Buildings—			
a. Roads and bridges ...	50	4	0
b. Buildings ...	36	4	1
c. Other works ...	...		
VIII.—Demarcation, Improvement and extension of Forests—			
a. Demarcation ...	2	4	0
b. Compensation for land and rights ...	1,662	9	0
c. Surveys and working plans ...	...		
d. Plantations ...	1,667	9	10
e. Protection from fire ...	1,144	12	4
f. Other works ...	46	4	3
IX.—Miscellaneous—			
a. Refunds ...	...		
b. Law charges ...	...		
c. Other charges ...	27	9	3
Total A.—Conservancy and Works ...	4,755	6	3
B.—Establishments.			
I.—Salaries—			
a. Conservators ...	...		
b. Superior officers ...	1,796	12	4
c. Subordinate forest and depôt establishments ...	3,525	15	7
d. Office establishments ...	1,415	3	4
e. Deputation and special allowances ...	...		
II.—Travelling Allowances—			
a. Conservators ...	...		
b. Superior officers ...	501	13	0
c. Subordinate forest and depôt establishments ...	117	8	7
d. Office establishments ...	122	4	4
III.—Contingencies—			
a. Stationery ...	13	13	9
b. Carriage of tents and records ...	76	15	3
c. Rents, rates, and taxes ...	...		
d. Pay of police guards ...	...		
e. Official postage ...	20	0	0
f. Sundries ...	77	5	0
Total B.—Establishments ...	7,667	11	2
Grand total of all Expenditure ...	12,423	1	5

Annual Form No. 50.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Account Current for the year 1880-81

Dr	Rs.	A.	P.	Cr.	Rs.	A.	P.
To Cash Balance on 1st April 1880	.....			By Expenditure as per annual summary	12,423	1	8
„ Revenue as per annual summary	1,124	4	9	„ Forest Cash Remittances (Local)	1,124	4	9
„ Forest Cash Remittances (Local)	11,885	2	1	„ Advances recoverable	1,971	6	6
„ Advances recoverable	2,509	5	10	„ Inter-departmental Transfers (Public Works Department, Rajputana, and other branches)	27	15	1
„ Inter-departmental Transfers (Public Works Department, Rajputana, and other branches)	27	15	1	„ Closing Balance on 31st March 1881	.....		
Total ...	15,546	11	9	Total ...	15,546	11	9

Annual Form No. 51.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Statement of outstandings and liabilities on account of Contractors and Disbursers for 1880-81.

Division.	Department Debtor.			Department Creditor.			Balance Due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstandings.)	By Department (Liabilities.)	
Ajmere Forest Division ...	...	2,509 5 10	2,509 5 10	748 4 9	1,971 6 6	2,719 11 3	300 12 6	90 7 1	
Total ...	...	2,509 5 10	2,509 5 10	748 4 9	1,971 6 6	2,719 11 3	300 12 6	90 7 1	

Govt. Central Branch Press, Simla.—No. 623 H. D.—20-10-81.—270.

No. 1143 F., dated Fort William, the 26th December 1881.

From—A. MACKENZIE, Esq., C. S., Offg. Secretary to the Government of India, Home Department.

To—The Surveyor General of India.

I AM directed to acknowledge the receipt of your letter No. 593F., dated the 25th October last, submitting the Annual Report of the Superintendent of Forest Surveys for the year 1880-81, together with your remarks thereon.

2. During the year under review the survey of the sub-montane forests of Kumaun and Garhwal has been continued, while in addition certain operations were conducted in the Tons Division and in Berar. The total outturn of field work appears somewhat smaller than that of the year 1879-80. The area planetabled in 1880-81 comes to 260 square miles as against 318 square miles in the previous year, while the areas triangulated during the two years amount to 93 and 237 square miles respectively. The falling off is explained by the fact that a very large number of the employés were attacked by fever, which necessitated the closing of the field work at an early date, and by the deputation of separate parties to Ranikhet and Berar, who did work which cannot be indicated in square miles.

3. The expenditure of the year amounted to Rs. 40,335 as against Rs. 46,878 in the previous year. The total expenditure for field and office work together per square mile planetabled stands as follows:

		Rs.
Cost per square mile in 1879-80	... ...	111
Do. do. 1880-81	...	118
	Increase ...	Rs. 7 per

square mile, which is explained by what has been stated above.

4. On the whole the cost of the work has considerably decreased since the Forest Survey Branch was first started, as will be seen from the subjoined data:

	Cost per sq. mile.
	Rs.
Dehra Dun and Saharanpur Survey	310
Jaunsar and Tons Survey	203
Kumaun and Garhwal Survey (up to date) ...	115

This is very satisfactory. At the same time it is believed that the cost is still somewhat higher than in the Imperial Survey Department, and this is due to the fact that the operations of the Forest Survey are generally conducted in remote and difficult parts of the country, which have naturally been set aside as forests.

5. In paragraph 8 of the report it is stated that the lists of all maps available of the reserved forests in the different provinces, the compilation of which was suggested in the Government of India orders on the report for 1879-80, are under preparation. It is hoped that this subject may not be lost sight of, and that the lists may be completed at an early date.

6. The Governor General in Council notices that you consider the report to be highly satisfactory, and he is glad to observe that the Forest Survey Branch has now been brought to a high state of efficiency. For this much credit is due to the Superintendent, Major Bailey. The services rendered to the department by the Head Quarters Office of the Trigonometrical Survey at Dehra, under Mr. Hennessey, are also, as you point out, deserving of acknowledgment.

No. 1144 F.

COPY forwarded to the Government of the North-Western Provinces and Oudh for information.

No. 1145 F.

COPY forwarded to the Superintendent of Forest Surveys for information.

N. C. D.—Home Department Press—No. 449—26 12-81—355

REPORT OF THE SUPERINTENDENT OF FOREST SURVEYS FOR 1880-81.

No. 147, dated the 15th October 1881.

From—Major F. BAILEY, R. E., Superintendent of Forest Surveys.

To—The Surveyor General of India.

I HAVE the honour to forward in duplicate my Progress Report from the 1st October 1880 to the 30th September 1881, and to request the favour of your forwarding one copy to the Government of India.

No. 593F., dated the 25th October 1881.

From—Lieutenant-General J. T. WALKER, C. B., R. E., Surveyor General of India.

To—The Offg. Secretary to the Government of India, Home Department.

I HAVE the honour to forward herewith Major Bailey's Annual Report of the Forest Survey Department from the 1st October 1880 to the 30th September 1881.

2. The general outturn of work, both in the field and in office, appears to have been as much as could possibly be executed by the establishment at Major Bailey's disposal, under the varied circumstances which are fully set forth in his report. An intricate portion of the computations was examined in my office and found correct in all respects. The mapping generally is of a high order, not inferior to some of the best of the Survey Department, which is due in great measure to the excellent draughtsmanship of Messrs. Reynolds and Litchfield; and the general organization of Major Bailey's Office at Dehra is very creditable to that officer.

3. The value of the present report is much enhanced by the account of the method of preparing the final maps in paragraph 7, the details of expenditure and rate per square mile in paragraphs 9 and 10, and the description of the Forest Survey work in paragraph 11. The gradual decrease in the rate of expenditure is a satisfactory proof of the growing efficiency of the Surveyors, both European and Native. I am gratified to notice that it is to improved efficiency that Major Bailey looks for reduction of cost rate, rather than to endeavouring to get over the ground with greater rapidity than is compatible with accurate survey. At the same time I think he exercises much judgment in directing the energies of the surveyors to the points of most importance for forest administration; thus, while all the principal roads, water-partings and water-courses, and the sub-divisions of different patches of forest, are closely surveyed and mapped, the less important hill features are sketched roughly, and are shown on the field sketches in a different colour from the accurately delineated features; thus hereafter there will be no difficulty in distinguishing close survey from approximate survey, which is a very great advantage.

4. Much valuable collateral work of instruction of officers and subordinates, and granting certificates of qualification and preparing special maps for the requirements of the Local Governments, appears to have been executed in connection with the Forest Surveys.

5. I consider the report to be highly satisfactory in all respects but one; it makes no mention of the constant and valuable assistance the Forest Survey Department receives in the publication of its maps from the Head Quarters Office of the Trigonometrical Survey at Dehra, under Mr. Hennessey, as already set forth in paragraph 3 of my No. 522E., dated the 11th October 1880.

Annual Progress Report of the Forest Survey Department from the 1st October 1880 to the 30th September 1881, by Major F. BAILEY, R.E., *Superintendent of Forest Surveys, dated the 15th October 1881.*

THE SEASON'S FIELD WORK.

Kumaun and Garhwál including Ránikhet.

THE main camp under Mr. W. H. Reynolds, Deputy Superintendent, marched from Dehra on the 9th November, and reached Nánakmatta, in the Tarai District, on the 5th December. Planetabling was at once commenced, and it was continued in the Nindhaur Valley, Kali Kumaun, the Dhiáni Rau Forests, and on the Gola Nadi to the south-east of Haldwáni until the 26th April, when the camp marched for Dehra. The country lying between Láldháng and Saneh, in Garhwál, was triangulated and traversed in advance. The camp was moved to Dogári on the 13th December and to Haldwáni on the 15th April. On the 26th April Mr. Chill proceeded with four Native Assistants to Ránikhet, where he was employed until the 15th June in completing the survey of the forests of that Forest Division. His work consisted in surveying the boundaries of the numerous plots of private land within the forests which had not been demarcated at the time that the survey of the forests was made.

Tons Division.

2. Mr. Litchfield, assisted by three Native Surveyors, worked in the Deota, Lambatách and Kotigádh leased forests (Tiri-Garhwál) from the middle of April until the beginning of July, when he completed the work. Mr. Reynolds took a Native Surveyor to the Raiengarh and Dádi Forests in May, and after giving him instructions to carry out the triangulation, he returned to Dehra. The triangulation was completed in a very satisfactory manner.

Berar.

3. The Government of India having ordered a survey on the scale of 4″ = 1 mile of ten black soil villages within the Bairagarh Reserve, and also the entry on existing maps (scale 1″ = 1 mile) of the boundaries of the Bairagarh, Gugumál and Jiri Reserves, as well as the entry of all new roads on the maps of the Bairagarh and Gugumál Reserves, and the entry on existing maps (scale of 2″ = 1 mile) of the boundaries of the reserves in the plains of South Berar, Mr. Reynolds was directed to proceed to Amraoti for the purpose of consulting with the Conservator of Forests regarding the carrying out of this work. He spent the 16th and 17th March in Amraoti and the neighbourhood, and submitted a report on which the plan of operations was determined. Mr. Thomas Marten, with two Native Surveyors, left Kumaun early in April, and after traversing the boundaries of six villages, the Ráipur cart road, and a portion of the northern boundary of the Bairagarh Reserve, he returned to Dehra at the setting in of the rains.

4. A summary of the outturn of field work will be found in Appendix (A). The area planetabled on the scale of 4″=1 mile was 260 square miles. In Kumaun and Garhwál the average monthly outturn for a party of one European and three Native Surveyors was 11·2 square miles. The amount for one European and 3½ Native Surveyors during the previous season having been 10·6 square miles. One European and three Native Surveyors employed in the Tons Forests turned out on an average eight square miles per mensem. Here the ground was much more difficult than that surveyed in Kumaun. The total area planetabled was less than that reported during the previous season (318 square miles), the reasons being that in consequence of a very large number of the establishment having become laid up with fever, the work had to be closed on an early date; that Mr. Thomas Marten and two Native Surveyors were deputed to Berar early in April; and that against the heavy work in Ránikhet, which occupied more than one and-a-half months, and involved the fixing of 1,062 boundary marks round 258 plots, it is not possible to show any area of ground planetabled, because the natural features of the country had all been previously surveyed. The area triangulated was 93 square miles, within which 158 points were fixed. The linear distance traversed was 423 miles, within an area of 279 square miles; the number of traverse stations fixed being 5,177. Barometrical observations were made at 768 places. The triangulation and traversing are sufficiently advanced to provide for the coming season's work, 212 square miles of ground being triangulated and traversed, and 206 square miles being triangulated only.

Abstract of field work executed.

OFFICE WORK.

5. An abstract of the outturn of computations will be found in Appendix (A). The number of linear miles of traversing computed was 269, the average correction on the hypotenuse being 4·7 per 1,000. The whole of the traverse work in Kumaun and Garhwál has been computed. The number of triangles worked was 328, the number of points determined being 171. The number of Great Trigonometrical Survey stations computed from latitude and longitude was 15. The computations of triangles is sufficiently advanced to provide for the coming season's work. The number of triangles worked to determine heights was 680, and the number of points of which the height was thus determined was 285. The number of barometrical observations computed was 1,199, and the number of points of which the heights were determined thereby was 821.

Computations.

6. An abstract showing the original drawings under preparation during the year will be found in Appendix (B). Of the Kumaun and Garhwál sheets reported as being in progress last year, Nos. LIV, LV and LXIV have been printed. Sheets Nos. XII, XIII, XLVI, XLVII, XLVIII, LXII and LXIII are in the Press. The following sheets are ready with the exception of the printing of the names, Nos. XLIV, LVI, LX, LXI, LXVII, while the following sheets are still in the hands of the draughtsman, Nos. LVII, LXV and LXVIII. A map of the reserved forests in the Kheri and Pilibhit Districts of Oudh, and another of the reserved forests in the Bahraich District of Oudh, both on the scale of 4 miles=1″, were drawn and printed. A map of the reserved and protected forests in the Kumaun Civil Division was drawn on the scale of 4 miles=1″, and it is now in

Map drawing.

the Press. A sketch map showing the forest reserves in the Pegu and Tenasserim Divisions of British Burma was drawn on the scale of 16 miles=1", and is now going to Press. A chart of triangulation and traversing for the Kumaun and Garhwál Forest Survey is in progress, and Sheet III is now in the Press. Four other maps of less importance than those above mentioned were drawn, and three of them were printed to accompany reports.

Method of preparing fair drawings.

7. The fair sheets are drawn on bank post paper bound at their edges with cloth. Before the sheet is made over to the draughtsman, the graticule is projected by the aid of a brass frame perforated at the proper intervals, and the trigonometrical stations are plotted. In each drawing table is inserted a pane of glass, below which is fixed a tin reflector to throw the light upwards. The table is surrounded on three sides with curtains to keep out light from above. The fair sheet is laid on the table and the field sheets, which are drawn on bank post paper mounted on thin cloth, are passed under it and adjusted over the glass by means of the squares and trigonometrical stations, and the topographical detail is traced in ink directly from the field sheets. The drawing proceeds uninterruptedly, without any intermediate tracing in pencil over an ordinary tracing glass, without the use of black transfer paper, and without consideration of the position of the names, which are subsequently added in the following manner. A list of all the names which are to appear on the fair sheet is compiled from the field sheets—the names are given. Serial numbers which are entered both on the list and in the proper places on a sheet of tracing cloth drawn up to correspond with the fair drawing; and the kind of type to be used is entered on the list opposite each name. The list thus prepared is made over to the type-printer, who sets up each name in succession, and prints it from four to six times on white paper. Several sets of names appear on each sheet of printing paper, the proper serial number being written against each name, and the sheets are then sewn together and handed, with the list and the tracing cloth, to the man who is to attach the names to the fair drawing. This he does after the drawing is quite completed; he selects the best impression of each name, cuts it out, and fastens the slip with gelatine in its proper place. He is guided to the locality by the number on the printing paper and the corresponding number on the tracing cloth, and he selects the exact spot for the name by reference to the field sheet. The edges of the slips are then scraped down, and if they appear too white, the drawing is carried over their edges to the required extent. The fair drawing is then ready to be printed. The system here described has been found to answer very well, its great advantages being that while the topographical detail can be copied directly from the field sheet, and that thus small errors of copying which are unavoidable under most other systems are not so readily incurred, the four men, viz., the draughtsman, the list maker, the printer, and the man who attaches the names to the sheet, work quite independently of one another from the beginning to the end of the season, and no one man is delayed by having to wait for the completion of the work of another.

Miscellaneous work.

8. Thirty-two tracings were made for various forest and district officers, 305 printed maps were coloured, and 94 printed maps were mounted in book form. The lists of all available maps of the reserved forests in the various provinces under the Government of India adverted to in the review on last year's report are under compilation.

EXPENDITURE.

Expenditure during the survey year.

9. The amounts expended on field and office work in Kumaun and Garhwál and on the Tons, as well as the charges for work not connected with these surveys, will be found in Appendix (C). The cost of the work in Berar, which amounted to Rs. 1,880, was defrayed from Provincial funds. In Kumaun and Garhwál the cost of the field work was Rs. 21,592, and of the office work Rs. 6,829. In former years it has been usual to give the cost per square mile of the field work only, but as this is not customary in the Survey of India, the cost per square mile as now given includes both field and office work. It is calculated on the area planetabled, and amounts to Rs. 118 per square mile as compared with Rs. 111 for the previous year. The cost per acre was, in 1880-81, 3 annas, and in 1879-80 it was 2 annas 10 pies. The rates of 1880-81 were higher, than those of the previous year, 1st, because, as previously explained, some heavy and intricate work had to be done at Ránikhet, which could (had the boundaries and marks been ready at the time the forests were surveyed in 1878-79) have been laid down on the maps without much additional trouble or expense, but which, having to be done after the survey had been otherwise completed, occupied a considerable time and afforded no additional area of planetabling; 2nd, because the establishment suffered severely from fever; towards the close of the field season many of them were under treatment in hospital, and several men returned to Dehra Dún seriously ill. Mr. Reynolds still suffers from fever contracted during the season's work.

Final cost of work hitherto accomplished by the Forest Survey.

10. It is now desirable to refer to the final cost of the work hitherto accomplished by the Forest Survey. The Dehra Dún and Saháranpur Survey has cost 7 annas 9 pies per acre, or Rs. 310 per square mile including all charges; the Jaunsár and Tons Surveys have cost 5 annas 1 pie per acre, or Rs. 203 per square mile; the Kumaun and Garhwál Survey has, up to the close of the period to which this report relates, cost 2 annas 11 pies per acre, or Rs. 115 per square mile, and it is probable that the final cost of this work will be 2 annas 10 pies per acre, or Rs. 112 per mile. It will therefore be seen that the cost of the work has latterly very much decreased. At first the establishment was new to the work, ground had sometimes to be surveyed twice over, and the present regular system had not been developed. The Native Surveyors, who are chiefly hill men from Garhwál, trained entirely in the Forest Survey, are now skilful, both in out-door work and in office work. The European Surveyors know what is required of them, and the work progresses much more rapidly, with a corresponding reduction in rate. The cost per square mile is however probably still in excess of that usually incurred by other survey parties, and it may perhaps not be considered out of place if a brief account of the system of work now adopted in the Forest Surveys is here given.

Description of the Forest Survey work.

11. The work hitherto accomplished by the Forest Survey differs from that ordinarily undertaken by the Imperial Survey Department, principally in that the ground is mountainous and forest-clad, such as would usually be surveyed by the Topographical Branch on the scale of 1″ = 1 mile, based as a rule on triangulation only, the detail being sketched on the planetable, and the scale and system of work adopted by the Forest Survey are more analogous to those employed in the Revenue Branch, which generally speaking is engaged in the survey of less rugged and more open country. The

most densely wooded tracts have been selected as forest reserves, and they are usually far from villages, and supplies and carriage are difficult to obtain. The survey is made on the comparatively large scale of 4″ = 1 mile, and to enable the maps to be fully utilized for the purpose of making valuation surveys, and for the computation of the areas of compartments, as well as to enable the densely wooded ground to be readily recognized from the maps, it is necessary to show many details, such as small ravines and spurs, and to lay them down on the maps with accuracy. The first step is to extend the triangulation previously executed by the Imperial Survey Department, so as to furnish the requisite number of fixed points for work on the larger scale. A network of traverses is then run over the ground, all important roads, paths, and stream beds being measured; the traverses are connected with the trigonometrical stations, and the numerical values of the traverse stations were calculated from them. In the case of plateaux or other level ground, traverses are run across the drainage, so as to give a sufficient number of fixed points for the guidance of the planetablers. The planetable work is based on the trigonometrical and traverse stations. In hilly ground the positions of all important ridges and spurs are fixed by means of planetable intersections at short intervals, and the beds of all important watercourses are chained, the chaining being connected with the trigonometrical or traverse stations, or with points fixed by intersection on the planetable. This work is done by Native Sub-Surveyors on pay varying from Rs. 8 to Rs. 31 per mensem, three or four of them working under the direction of a European Surveyor. They then sketch in the ground between the measured elevations and depressions, and it is the business of the European Surveyor to check the accuracy and sufficiency of their measurements, and to complete the sketching in a correct and artistic manner. In order that it may be possible to distinguish at a glance on the field sheets the portions of ground which have been accurately surveyed from those which have merely been sketched, the features which have been laid down by chain measurement or by numerous intersections on the planetable are shown on the field sheets in a different colour from the rest of the work. It is of great importance to have numerous local names correctly entered on the maps. On each field sheet is pasted a printed form in which the names within the area surveyed are entered by the planetabler both in English and in the Vernacular, reference being made by means of letters to the localities or features of the ground to which they relate. In order to furnish a large number of altitudes which are of so much importance for forest work, numerous observations are made with the aneroid barometer, and a printed form for the entry of the barometrical observations is pasted on to each field sheet. Each planetabler is also furnished with a sheet of tracing cloth, on which he records the nature of the forest growth in such detail as is ordered from time to time. This work occupies a very short time, and when it is intelligently done it furnishes a very useful record.

INSTRUCTION OF OFFICERS AND SUBORDINATES.

12. Under the orders of the Government of India, dated the 3rd August 1875, the following officers have since that date been attached to the Forest Survey for instruction :—

Mr. O. Greig,	Assistant Conservator of	Forests	...	1875-76
„ Jellicoe	„	„	...	1876-77
„ Down	„	„	...	1876-78
„ Stewart	„	„	...	1876-79

These officers all gained certificates of qualification by the Higher Standard. Moung Shwe Gone, Forest Apprentice from British Burma, was under instruction in 1878-79, and gained a certificate of qualification by the Lower Standard. Seven apprentices, students at the Forest School, are now under instruction. A certificate of qualification by the Higher Standard has been granted to Mr. H. C. Hill, Assistant Conservator, who was formerly on the Forest Survey Staff, and to Babu Karuna Nidhan Mukerji, formerly a Sub-Surveyor in the Forest Survey and now a Probationer for the higher grades of the Department.

CERTIFICATES OF QUALIFICATION IN SURVEYING GRANTED TO OFFICERS AND OTHERS WHO WERE NOT ATTACHED TO THE FOREST SURVEY.

13. Since October 1877 the maps and field books of 38 officers, subordinates and candidates for the Department have been examined and reported on. The detail is as follows :—

Officers	15
Subordinates	6
Candidates	17
Total ...	38

Certificate of qualification by the Lower Standard were given to 26 of these; the work of three subordinates and one candidate was examined during the past year.

OFFICERS OF THE SUPERIOR STAFF.

Mr W. H Reynolds, Deputy Superintendent, Forest Surveys.

14. Mr. Reynolds has had executive charge of the Kumaun and Garhwál Survey and of the office work at head quarters. He has conducted his duties in a most satisfactory manner, showing much tact in dealing with his subordinates, as well as professional skill in superintending the execution of the work.

Mr. E F. Litchfield, Assistant Conservator of Forests.

15. Mr. Litchfield was employed in planetabling in Eastern Kumaun from the beginning of the field season until the 12th April, when he left for the Tons Forests and worked in Kotigádh, Bámso and Surás. He returned to head quarters on the 15th July, and obtained examination leave from the 3rd September. He has worked well.

FOREST SURVEYORS.

Mr. G. P. Chill.

16. Mr. Chill marched with the head quarters camp from Dehra on the 9th November, and was employed in Eastern Kumaun until the 27th April, when he marched for Ránikhet, and executed the work there which has been previously described. He returned to head quarters on the 19th June. He continues to work well and to give satisfaction.

Mr. Thomas Marten.

17. Mr. Thomas Marten marched from Dehra with the head quarters camp, and was employed in the Nindhaur Valley until the 5th April, when he was deputed to Berar to take up the work there. He returned to Dehra in the middle of June. He has worked very well throughout the year.

18. Mr. James Marten was employed throughout the field season in Kumaun, returning to Dehra on the 18th May. He did a good season's work, but his health has suffered from repeated attacks of fever.

Mr. James Marten.

SUB-SURVEYORS

19. The average monthly strength of the native establishment employed on each kind of work during the field season was as follows :—

Triangulation	...	...	...	...	½
Plotting boards	...	...	...	...	½
Traversing	...	...	...	...	2½
Computing	...	...	...	...	2
Planetabling	...	...	...	...	14
			Total in field	...	19½
			At head quarters	...	5
			Total	...	24½

As a rule they did their work in a very satisfactory manner.

20. The following documents are appended to this report, viz.—

1. Chart illustrating the progress of the work.
2. Appendix (A). Summary of outturn of field work and computations.
3. Appendix (B). Summary of outturn of drawing and miscellaneous work.
4. Appendix (C). Summary of expenditure from the 1st October 1880 to the 30th September 1881, showing the amounts expended on field and office work.
5. Annual Form No. 49. Summary of revenue and expenditure during the financial year.
6. Annual Form No. 51. Statement of outstandings and liabilities.

APPENDICES.

APPENDIX (A).

Summary of the outturn of field work and computations by the Forest Survey Department from the 1st October 1880 to the 30th September 1881.

No.	Kumaun and Garhwál and Jaunsár Survey.	Amount.	Remarks.
1	Area planetabled on the scale of 4″ = 1 mile— (a) Kumaun and Garhwál ... 241 square miles (b) Tons ... 19 " "	260	Square miles.
2	Area triangulated— (a) Kumaun and Garhwál ... 61 " " (b) Dadi-Raiengárh ... 32 " "	93	Ditto.
3	Number of points fixed	158	
4	Area traversed	279	Ditto.
5	Number of linear miles traversed— (a) Kumaun and Garhwál ... 250 (b) Dehra Dún ... ... 61 (c) Berar 112	423	
6	Number of traverse stations	5,177	
7	Ditto linear miles of traversing computed ...	269	Average correction per 1,000 = 4·7.
8	Ditto triangles worked	328	Computed in duplicate.
9	Ditto points fixed thereby	171	
10	Ditto Great Trigonometrical Survey stations computed.	15	
11	Ditto triangles worked to determine heights ...	680	Ditto ditto.
12	Ditto points of which the heights were determined thereby.	285	
13	Ditto barometrical observations ...	768	
14	Ditto ditto ditto computed ...	1,199	Ditto ditto.
15	Ditto points, the heights of which were determined thereby.	821	

NOTE.—For the work of the coming field season there are 212 square miles triangulated and traversed in advance and 206 square miles triangulated only.

APPENDIX (B).

Summary of outturn of drawing and miscellaneous work by the Forest Survey Department from the 1st October 1880 to the 30th September 1881.

	Original drawings in progress.	Number.	
1	Kumaun and Garhwál Sheets XLIV, LVI, LVII, LX, LXI, LXV, LXVII and LXVIII.	8	Sheets.
2	Map of the Reserved Forests in Districts Kheri and Pilibhit, scale 4 miles = 1″.	1	Ditto.
3	Map of the Reserved Forests in District Bahraich, scale 4 miles = 1″.	1	Ditto.
4	Map of the Reserved and Protected Forests in Districts Kumaun, Garhwál and Tarai, Kumaun Division, scale 4 miles = 1″.	1	Ditto.
5	Sketch map showing Forest Reserves (sanctioned and proposed) in the Pegu and Tenasserim Divisions of British Burma, scale 1″ = 16 miles.	1	Ditto.
6	Map showing the working blocks proposed to be formed in the Patli Dún Hill Forests, scale 1″ = 2 miles.	1	Ditto.
7	Map of the Patli Dún Hill Forests to accompany Mr. Dansey's working plan report, scale 1″ = 2 miles.	1	Ditto.
8	Sketch map showing Kotlai Road and branches, District Kumaun, scale 1″ = 2 miles.	1	Ditto.
9	Map of Todgarh Forest showing proposed felling operations, scale 4″ = 1 mile.	1	Ditto.
10	Sheet No. III.—Chart of Triangulation of Kumaun and Garhwál, scale 1 mile = 1″.	1	Ditto.
	Tracings made.		
11	Tracings made for various Forest and District Officers...	32	Ditto.
	Maps coloured.		
12	Printed maps of various kinds coloured	305	Ditto.
	Maps mounted.		
13	Printed maps mounted in book form	94	Ditto.
	Surveys of candidates examined.		
14	Surveys of candidates for the Forest Department examined and reported on.	4	.....

APPENDIX (C).

Summary of Expenditure from the 1st October 1880 to the 30th September 1881, showing the amounts expended on Field and Office work.

Number.	Months.	Kumaun and Garhwal.		Tons.		General.	Total.	Remarks.
		Field.	Office.	Field.	Office.			
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1	October 1880 ...	10	1,404	131	110	1,123	2,778	
2	November " ...	243	1,088	374	60	1,320	3,085	
3	December " ...	2,373	688	...	...	377	3,438	
4	January 1881 ...	3,303	107	...	...	181	3,591	
5	February " ...	3,477	87	...	...	175	3,739	
6	March " ...	3,385	76	...	...	525	3,986	
7	April " ...	3,990	42	148	...	209	4,389	
8	May " ...	3,047	68	399	...	139	3,653	
9	June " ...	1,288	229	1,255	...	463	3,235	
10	July " ...	476	700	716	100	947	2,939	
11	August " ...	...	1,092	275	200	1,750	3,317	
12	September " ...	...	1,248	...	350	1,106	2,704	
	Total ...	21,592	6,829	3,298	820	8,315	40,854	

that satisfactory results can be obtained with a much simpler instrument, consisting of a planetable, sight rule and compass, the use of which was originally suggested to Major Bailey by General Walker. A circular card protractor of 12″ diameter is pinned down on a planetable; on it is placed a 6″ magnetic needle, and to enable objects largely elevated or depressed to be observed, a fine thread is stretched between the central points of the tops of the vanes of the sight rule. The first step is to mark the position of the compass box upon the card protractor in such a manner as to eliminate the angle of variation of the magnetic needle and the angle of convergency between the meridian of the origin of the survey and that of the place where the instrument is being used. This is effected by setting up the table at a trigonometrical station near the main camp, and laying the sight rule across it at the angle of inclination of one of the sides of a triangle at the apex of which the table stands; the top of the table is then moved round until the sight vane points down the line to the inclination of which the ruler has been laid, and when the compass needle reads zero, the position of the compass box is marked on the card. It is manifest that the meridian line of the card protractor will then lie parallel to the meridian of the origin of the survey, and that if the table be set up during the course of a traverse with the compass box laid against the mark on the card, the same position of the meridian of the card will be maintained; and the readings will all give the inclinations to the meridian of origin which are required for the computations, no angular correction being needed, such as must be applied if a prismatic compass were employed. Should the work extend to a very long distance from the origin, so that the angle of convergency is much increased, it would be necessary to mark a new position for the compass box from time to time, and in any case it is as well to correct the position of the compass now and then, and by observation from a neighbouring trigonometrical station. The instrument is set up over each traverse station, and care is taken that the reading at each end of the diameter along which the ruler lies is the same, for it is then certain that the edge of the ruler passes over the centre of the card protractor. Back and forward readings are taken between each pair of traverse stations, and thus there is a good check on the record of angular measurements. The instrument is of course more cumbrous than an ordinary prismatic compass, but it has the following advantages over both this and the theodolite. It is much less expensive than the theodolite; it is very strong, and, unless some of the parts are actually broken, it cannot get out of order; while it is at least as quickly set up and used, and the use of it can be very quickly learnt by any Native of ordinary intelligence who can read and record figures. The long needle and large arc, together with the convenience of being able to read at once the angles that are required for the computation, give it a great advantage over the prismatic compass, and the results obtained clearly show this. The arc is graduated to quarter degrees, and if the edge of the ruler lies between two marks, its position between them is estimated, and the mean of the back and forward readings is used in the computations. Daily, hourly, or local variations of the magnetic needle are of course to be encountered, but these are common to all instruments in which the magnetic needle is depended on. The distances are measured with chains of different units (Gunter's and 100′ chains), and the measurements in feet are converted on the spot into links by means of a table, so that any error can be detected, and the distance re-measured at once, if necessary. The mean of the two measurements is adopted as the true distance when working out the computations. To obviate

errors due to the slope of the ground, a clinometer is used, and the distances are corrected by means of a table before being entered in the computation sheets. The traverses often run over very rough ground, such as the dry stony beds of mountain streams, and the slope is sometimes as much as 30°, but the average hypotenusal correction for last year was only 4·1 per 1,000, the figures for the previous year being 4·7. The following extract from the field book will explain how it is kept :—

Distances in feet.	Reduction of feet to chains from table.	B—back ray. F—forward ray.	Bearings and mean of distance.	Station numbers.	Distances by Gunter's chain.	Slope.
186	1·51 1·30	B	21° 08′			
	2·81		2·82	C[88] H.S.	2·82	22°
		F	201° 00′			
169	1·51 1·05	B	9·30			
	2·56		2·57	65	2·57	6°
		F	189° 23′			
143	1·51 ·65	B	49·38			
	2·16		2·15	64	2·14	22°
		F	229° 45′			
317	4·55 ·26	B	15·30			
	4·81		4·81	63	4·81	18°

A further use is made of the instrument above described. Each traverser is furnished with a sheet showing the correct positions, on the scale of 4″=1 mile, of all the trigonometrical stations in the neighbourhood of his work; and, after inspection of existing small scale maps, the lines that he has to traverse are roughly indicated for him on it, and he plots his work on this sheet by drawing the lines each time that he sets up the table. This system has three great advantages:—1st, the plot made on the ground is a check against gross error, such as the reversal the inclination of a line; 2nd, the traverser can at once see how his work progresses with reference to trigonometrical stations, and can without difficulty connect it with any that he may approach, and make sure that he will be able to close his work on a fixed point; 3rd, it is easy to indicate to him before he goes out what is required of him. The whole of the traversing is executed on the system above described.

EXPENDITURE.

Expenditure during the Survey year.

12. The expenditure on field and office work in Kumaun, Garhwál and the Tons Divisions, as well as the charges for other work, will be found in Appendix (C). The cost of the work in Berár amounted to Rs. 3,888, which sum was provided from Provincial funds. The total cost of the field and office work in the Kumaun, Garhwál and Tons Divisions and in Berár, including all expenditure, was Rs. 27,738, and the all-round cost per square mile of the season's work, estimated on the total area planetabled, (viz., 239 square miles on 4″, and 26 square

miles on 2″ = 1 mile) was Rs. 104, or 2 annas 7 pies per acre. The cost of the work for the previous season, estimated in the same way, was Rs. 132 per square mile, or 3 annas 4 pies per acre, but this figure was unusually high for reasons explained in last year's report, and it included work in the Tons forests and Berár against which there was no area planetabled to show. It will be noticed, that the rate entered in paragraph 9 of last report gives the cost of the work in Kumaun and Garhwál alone, whereas the figures now given include all work.

Final cost of the Forest Survey work.

13. The final cost of the Saháranpur and Dehra Dún Surveys was reported last year. The cost of the Kumaun and Garhwál Survey up to the end of the previous year was 2 annas and 11 pies per acre, or Rs. 115 per square mile; adding the subsequent outturn and charges (to end of 1881-82) to the previous figures, the cost, including all charges, stands at Rs. 116 per square mile. The Jaunsár and Tons Survey has cost up to date 4 annas 5 pies per acre, or Rs. 178 per square mile, including all charges, but the mapping of Dádi and Raiengarh has yet to be done.

OFFICERS OF THE SUPERIOR STAFF.

Mr. W. H. Reynolds, Deputy Superintendent of Forest Surveys.

14. Mr. W. H. Reynolds, Deputy Superintendent, held executive charge of the field operations in Kumaun and Garhwál and in the Tons Division as well as in Berár, and also of the office work at Dehra Dún. The Chándi forest was triangulated by him, and he visited each of the field parties from time to time and scrutinized the work. He was on privilege leave from the 5th May to the 4th August. The Superintendent desires to bring prominently to notice the good work done by Mr. Reynolds since the Forest Survey Department was first organized.

Mr. E. F. Litchfield, Assistant Conservator of Forests.

15. Mr. Litchfield was employed in planetabling in Eastern Kumaun from the 26th November to the beginning of May, and held charge of the head-quarters office at Dehra from the 5th May to the 4th August. He acted as Deputy Superintendent from the 5th May to the 4th August, and passed in Hindustani by the Higher Standard in October last; he is an excellent draughtsman, and his field sheets are neatly finished. He worked well throughout the year.

FOREST SURVEYORS.

Mr. G. P. Chill.

16. Mr. Chill marched from Dehra on the 2nd November with the head-quarters camp, and began planetabling in Garhwál on the 17th; he was employed in Garhwál until the beginning of April, when he left for Jaunsár to take up the survey of the Dádi and Raiengarh forests; he returned to Dehra on the 28th June, and was on privilege leave from the 15th July to the 14th September. Mr. Chill continues to work steadily and well.

Mr. T. S. Marten.

17. Mr. T. S. Marten marched from Dehra with the head-quarter's camp, and was employed on planetabling in Eastern Kumáun, from the 25th November to the 1st February; he was then ordered to Berár to continue the work that he had begun during the previous season; he closed work there on the 6th May and returned to Dehra.

He has very much improved in his drawing, and has now become a skilful draughtsman; he has worked well and continues to give satisfaction.

Mr. James Marten

18. Mr. James Marten was employed throughout the field season in Garhwál; he began planetabling on the 18th November and returned to Dehra on the 26th May. In January he met with an accident and was obliged to go on two months' sick leave; but he has worked very well, and has improved very much in his work both in office and in the field.

SUB-SURVEYORS

19. The average monthly strength of the Native establishment employed on each kind of work during the field season was :—

Plotting boards	1
Traversing	1½
Computing	5
Planetabling	13½
Total in field ...	21
At head-quarters ...	6
Total ...	27

The whole of the Native establishment worked willingly and well, and some of them are becoming expert Surveyors.

Health of the Establishment.

20. The European as well as the Native establishment suffered a good deal from fever; one of the Native Surveyors died immediately after the field season from fever that he had contracted in Eastern Kumaun.

WORK DONE BY THE SURVEY OF INDIA FOR THE FOREST SURVEY.

21. Before closing this Report the Superintendent of Forest Surveys desires to acknowledge the invariable courtesy of Mr. J. B. N. Hennessey, Deputy Superintendent, Survey of India, in charge of the Head Quarters Office at Dehra, who has undertaken the publication of the maps and a considerable quantity of miscellaneous printing and other work. The work undertaken in Mr. Hennessey's Office has always been executed promptly and in a thoroughly satisfactory manner, and the Forest Survey continues to derive the greatest advantage from its intimate connection with the Survey of India.

22. The following documents are appended to the Report, viz.—

1. Chart illustrating the progress of the work.
2. Appendix (A). Summary of outturn of field work and computations.
3. Appendix (B). Summary of outturn of drawing and miscellaneous work.
4. Appendix (C). Summary of expenditure from the 1st October 1881 to the 30th September 1882, showing the amounts expended on field and office work.
5. Annual Form No. 53. Summary of revenue and expenditure during the financial year.
6. Annual Form No. 55. Statement of outstandings and liabilities.

APPENDICES.

APPENDIX (A).

Summary of the outturn of field work and computations by the Forest Survey Department from the 1st October 1881 to the 30th September 1882.

No.	Kumaun, Garhwál, Jaunsár and Berár survey.		Amount	Remarks.
1	Area planetabled on the scale of 4″ = 1 mile—			
	(a) Kumaun and Garhwál ...	179·2		
	(b) Berár—black soil villages ...	48·1		
	Ditto Forest boundaries with a strip of topography, 5 chains on either side ...	11·3	265	Square miles.
	Area planetabled on the scale of 2″ = 1 mile— Tons	26·5		
2	Area triangulated—Kumaun and Garhwál ...		38	Ditto.
3	Number of points fixed		50	
4	Area traversed		655	
5	Number of linear miles traversed—			
	(a) Garhwál	260	352	
	(b) Berár	92		
6	Number of traverse stations		4,032	
7	Ditto linear miles of traversing computed in duplicate.		284	Average correction per 1,000 = 4·1.
8	Ditto triangles worked in duplicate... ...		952	
9	Ditto points fixed thereby		433	
10	Ditto Great Trigonometrical Survey stations computed in duplicate.		223	
11	Ditto triangles worked in duplicate to determine heights.		1,241	
12	Ditto points of which the heights were determined thereby.		554	
13	Ditto barometrical observations		1,038	
14	Ditto ditto ditto computed in duplicate.		2,071	Include part of previous season's observations.
15	Ditto points, the heights of which were determined thereby.		1,957	

NOTE.—For the work of the coming field season there are 280 square miles triangulated and traversed in advance.

APPENDIX (B).

Summary of outturn of drawing and miscellaneous work by the Forest Survey Department from the 1st October 1881 to the 30th September 1882.

		Number.	
	Original drawings.		
1	Kumaun and Garhwál Sheets in progress, Nos. XXXVIII, XLV, XLIX, L, LVIII, LXVI, LXXII, LXXIV and LXXVII (Nos. LVI, LVII and LXV were included in the report of the previous year.)	12	Sheets.
2	Map of Dehra Dún Division showing beats, forests and forest ranges, scale 4 miles=1 inch (in progress).	1	Ditto
3	Sketch map of Darjeeling Forest Division, scale 1″=1 mile (completed.)	1	Ditto.
4	Sketch map of part of Bashahr, situated round the head waters of the Giri River, scale 1″=1 mile (completed.)	1	Ditto.
5	Map of 10 black soil villages in the Bairagarh Reserve, Berár, scale 1″=1 mile (in progress.)	1	Ditto.
	Tracings made.		
6	Tracings made for various Forest and District Officers	67	Ditto.
	Maps coloured.		
7	Printed maps of various kinds coloured	389	Ditto.
	Mounted maps.		
8	Printed maps mounted in book form	325	Ditto.
	Area of forest measured.		
9	Kumaun and Garhwál Sheets XII, XIII, XVI, XVII, XVIII, XXI, XXII, XXIII, XXV, XXVI, XXVIII, XXX, XXXI, XXXII, XXXIII, XXXIV, XXXV, XXXIX, XL, XLI, XLIV, XLVI, XLVII, XXLVIII, LII, LIII, LIV, LV, LX, LXI, LXII, LXIII, LXIV, LXVII and LXVIII (scale 4″=1 mile)	85	Ditto.
	Forest Growth entered on maps.		
10	Kumaun and Garhwál Sheets XII, XIII, XVI, XVII, XVIII, XXI, XXII, XXIII, XXV, XXVI, XXVII, XXVIII, XXX, XXXI, XXXII, XXXIII, XXXIV, XXXV, XXXIX, XL, XLI, XLIV, XLVI, XLVII, XLVIII, LII, LIII and LIV (scale 4″=1 mile.	28	Ditto.

APPENDIX (C).

Summary of Expenditure from the 1st October 1881 to the 30th September 1882, showing the amounts expended on Field and Office work.

No.	Months.	Kumaun and Garhwal.		Tons.		Dehra-Dun and Saharanpur.	General.	Total.	Remarks.
		Field.	Office.	Field.	Office.				
		Rs	Rs.			Rs.	Rs.	Rs	
1	October 1881 ..	..	1,093	...	..	...	2,145	3,238	These figures do not include Rs. 3,888 provided for work in Berár from the Provincial budget allotment.
2	November „ ...	128	857	...	...	...	2,074	3,059	
3	December „ ...	3,338	...	...	...	...	473	3,811	
4	January 1882 ...	3,521	...	...	...	...	936	4,457	
5	February „ ...	3,353	...	...	..	...	636	3,989	
6	March „ ...	2,775	...	...	...	...	891	3,666	
7	April „ ...	2,877	...	...	...	..	728	3,605	
8	May „ ...	2,141	...	262	...	4	838	3,245	
9	June „ ...	579	290	569	6	19	1,550	3,013	
10	July „ ...	...	427	516	...	80	1,823	2,846	
11	August „ ...	...	547	...	7	59	1,987	2,600	
12	September „ ...	...	490	...	74	38	2,039	2,641	
	Total ...	18,712	3,704	1,347	87	200	16,120	40,170	

ANNUAL FORM No. 53.—[*Prescribed.*]

Summary of Expenditure of the Forest Survey Branch during 1881-82.

Budget Heads.	Direction.
A.—Conservancy and Works.	Rs. As. P.
I.—Timber and other produce removed from the forests by Government Agency—	
a. Timber	.....
b. Fire-wood and Charcoal	.....
c. Bamboos	.....
d. Sandal-wood	.....
e. Grass and other Minor Produce	.....
II.—Timber and other produce removed from the forests by consumers or purchasers	.....
III.—Confiscated drift and waif wood	.....
IV.—Revenue from forests not managed by Government—	
a. Duty on Foreign Timber and other Forest Produce ...	.....
b. Revenue from Shared and Private Forests	.....
V.—Rent of leased forests, and payments to shareholders in forests managed by Government	.....
VI.—Live Stock, Stores, Tools and Plant—	
a. Purchase of Cattle	.....
b. Feed and Keep of Cattle	1,818 15 2
c. Stores, Tools and Plant	911 2 6
VII.—Communications and Buildings—	
a. Roads and Bridges	.....
b. Buildings	.....
c. Other Works	.....
VIII.—Demarcation, improvement and extension of forests—	
a. Demarcation	.....
b. Compensation for Land and Rights	.....
c. Surveys and Working Plans	6,091 10 8
d. Plantations	.....
e. Protection from Fire	.....
f. Other Works	.....
IX.—Miscellaneous—	
a. Refunds	.....
b. Law Charges	.....
c. Other Charges	48 8 6
Total A.—Conservancy and Works ...	8,870 4 10
B.—Establishments.	
I.—Salaries—	
a. Conservators	.....
b. Superior Officers	12,400 0 0
c(1). Upper Subordinate Establishments	6,246 4 7
c(2). Lower Subordinate Establishments	7,708 1 0
d. Deputation and Special Allowances	260 0 0
II.—Travelling Allowances—	
a. Conservators	.....
b. Superior Officers	2,387 10 6
c(1). Upper Subordinate Establishments	1,495 3 7
c(2). Lower Subordinate Establishments	1,276 10 2
III.—Contingencies—	
a. Stationery	12 9 6
b. Carriage of Tents and Records	649 5 10
c. Rents, Rates and Taxes	.....
d. Pay of Police Guards	.....
e. Official Postage	208 15 0
f. Sundries	974 4 9
Total B.—Establishments ...	33,619 0 11
Grand Total of Expenditure ...	42,489 5 9

ANNUAL FORM No. 55.—[*Prescribed.*]

Forest Survey Branch, Statement of Outstandings and Liabilities on account of Disbursers for 1881-82.

Division.	Department Debtor.			Department Creditor.			Balance due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstandings).	By Department (Liabilities).	
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.		
Forest Survey Division	...	2,258 12 6	2,258 12 6	186 6 6	2,655 7 7	2,841 14 1	583 1 7	...	
Total ...	...	2,258 12 6	2,258 12 6	186 6 6	2,655 7 7	2,841 14 1	583 1 7	...	

F. A. B.—Home Department Press—No. 85—2-2-83—250.

PROGRESS REPORT

OF

THE FOREST ADMINISTRATION

IN

AJMERE—MERWARA

FOR

1882-83

BY

L. S. SAUNDERS, ESQ., C.S.,

COMMISSIONER AND *EX-OFFICIO* CONSERVATOR OF FORESTS.

WITH A REVIEW BY THE CHIEF COMMISSIONER,

AND

ORDERS BY THE GOVERNMENT OF INDIA.

1884.

No. 189 F., dated Simla, the 28th March 1884.

From—A. MACKENZIE, Esq., CS, Secretary to the Government of India,

To—The Chief Commissioner of Ajmere.

I AM directed to acknowledge the receipt of your Secretary's letter No. 2111 S., dated the 24th August last, submitting (in manuscript) the Report on Forest Administration in Ajmere and Merwara for the year 1882-83, with your review thereof.

Area and Boundaries.

2. No change took place in the area of the Reserves, which remains at 122 square miles. The formation of further Reserves is, however, under consideration, and it is expected that the area will, for the present, be increased to 156 square miles. Some further additions may become feasible during the impending Settlement.

The boundaries are reported to be in good order, except that the pillars require renumbering, which work it is proposed to do during the season of 1883-84.

Protection of the Forests.

3. The cases of breaches of the forest rules which occurred during the year numbered 62, as compared with 102 in 1881-82; while 3,736 head of cattle were impounded, as against 5,815 in the previous year. The improvement in these respects is satisfactory, and is said to be due to the fact that the zamindars were sufficiently supplied with grass and wood for their actual requirements, thus obviating the necessity for their appropriating those articles in an unauthorized way.

Of the total area of Reserves, only 13 acres were burnt, which is satisfactory. The cost of fire protection during the year amounted to 1¾ pies per acre, or Rs. 5 per square mile.

Reproduction of the Forests.

4. It has not been shown in the Report what progress the natural reproduction of the forests has made. Small areas cut over in previous years have, on the whole, been fairly well restocked by coppice shoots.

No new Plantations were made during the year, but 58 acres were struck off the returns as failures, the area (including Nurseries) which now remains amounting to 355 acres.

About 56 maunds of various seeds were sown during the year, but the results were not satisfactory, as the seeds did not in all instances germinate, and many of the seedlings which came up were damaged by winter frost and summer heat.

Yield and Financial Results.

5. The financial results of the year, compared with those of 1881-82, were as follow:—

Year.	Receipts.	Charges.	Deficit.
	Rs.	Rs.	Rs.
1882-83	7,126	11,284	4,158
1881-82	4,066	13,954	9,888
Increase in 1882-83	3,060	...	...
Decrease " "	.....	2,670	5,730

The Receipts were increased, and the Charges were less; hence a reduction of Rs. 5,730 in the Deficit.

The Receipts were derived from the following sources :—

	1882-83. Rs.	1881-82. Rs.
Firewood and Charcoal	2,472	669
Bamboos	66	...
Grazing and Grass	3,720	1,755
Minor Produce	242	161
Miscellaneous	626	1,481
Total	7,126	4,066

It is expected that a few years hence the Receipts will equal the Charges.

6. The experiments regarding the rainfall within and outside the protected areas, and regarding the effect of protection on temperature, water-supply in wells, discharge of streams and springs, and on tanks, &c., which it was decided some years ago to make in Ajmere and Merwara, were held in abeyance during the year under review; but His Excellency the Governor-General in Council trusts that they will now be proceeded with, as a qualified Officer of the Superior Staff has taken charge of the forest business in those two Districts.

No. 190 F.

COPY, with copy of the Report, forwarded to the Government of the North-Western Provinces and Oudh for communication to the Conservator of Forests of the School Circle.

No. 191 F.

COPY, with copy of the Report, forwarded to the Foreign Department for information.

Govt. C. B Press, Simla.—No. 750 II D.—31-3-84—359.

REPORT OF FOREST ADMINISTRATION IN AJMERE-MERWARA FOR 1882-83.

No. 2111 S., dated the 24th August 1883.

From—The Secretary to the Chief Commissioner of Ajmere.

To—The Secretary to the Government of India, Home Department.

I am directed by the Chief Commissioner to submit the Annual Report of Forest Administration for 1882-83, together with his review thereof.

Extract from the Proceedings of the Chief Commissioner of Ajmere, in the Public Works Department—No. 2110 S., dated the 24th August 1883.

READ—

The Commissioner's Progress Report of Forest Administration in Ajmere-Merwara for the year 1882-83.

RESOLUTION.—Though actually no administrative changes were carried out during the year, ground was prepared for the introduction of modifications requisite for placing Mr. Lowrie in the same position as Mr. Moir formerly occupied, so far as possible without weakening the interest and co-operation of the District Officers, admitted to be essential to success in forest management. The various proposals made with this view were discussed between Mr. Saunders and Major Bailey, and the result of their deliberations has already been submitted to the Government of India. Proposals for a revision of the subordinate establishment have also been adopted and submitted to the Government of India for sanction.

2. Mr. Moir's Report on the inspection carried out by him early in the year 1882 was received in October 1882, and the recommendations contained therein under the various heads of forest work have been found to be useful and are engaging due attention. Generally, the progress made in the reserves since last inspection, especially in those of Merwara and those in the neighbourhood of Ajmere, has been noted to be encouraging, and coppice treatment has been suggested as likely to render reproduction quicker than under the system at present observed.

3. The area of the reserves and their boundaries remained the same as at the close of the preceding year, but the subject of extending Forest Reserves, wherever waste land is available, has received the particular attention of all the Officers concerned. Mr. Saunders personally inspected a certain area in Merwara in conjunction with the Forest and the Settlement Officers, while other tracts were reported upon conjointly by the latter. The result of these investigations has been that it is considered probable that the existing area of 122 square miles might be increased to 156. For an extension of 11,460 acres definite proposals have been made, and, under certain precautions, the extension is being proceeded with.

4. The number of prosecutions for forest offences and that of cattle impounded for trespass again exhibit a falling off. This is regarded by the Commissioner as an indication of the zemindars

having had their wants well supplied. The favourable character of the rains, and a more plentiful crop in consequence, must tend to reduce forest offences, as well as other crimes.

5. Fire protection has been carried out with success at a cost of Rs. 605-10-5, or at about Rs. 5 per square mile. The requirements of fencing have not been lost sight of, and the matter of inspection paths has been taken up.

6. The total area of plantations at the close of the year was 341 acres, exclusive of 58 acres excluded owing to failure. The progress reported of the limited plantations in Bari Nal and on the top of Nag Pahar appear to be very encouraging.

7. The financial results of the year under report appear to dispel all fears as to the Forest Reserves in Ajmere and Merwara never approaching to remunerative position. The revenue of the year covered nearly 65 per cent. of the total expenditure of the year. The remarks made by the Commissioner on the subject of grazing allowed in some of the Merwara tracts, in paragraph 19 of his Report, show how much more valuable is the reserved area in the eyes of the zemindars as grazing ground, and how, if unchecked and not properly controlled, the demand would grow beyond proper bounds. No specific report has yet been made as to whether the effect of grazing where allowed has been to retard the growth of forest to any appreciable extent.

8. The details of forest produce supplied to meet the requirements of agriculturists, and the estimate of the quantity of grass removed from the Forest Reserves, alone give an idea of their usefulness and the progress which has been made in this important branch of the administration.

9. These gratifying results are in a great measure due to the interest taken in the cause of Forestry by Mr. Saunders especially and by his Assistants generally. The assistance and advice rendered by the professional adviser, Major Bailey, R. E., Conservator of Forests, School Circle, North-Western Provinces, has also been very valuable in re-organizing the work and arrangements.

ORDER.—Ordered that a copy of this Resolution, together with the Report in original, be submitted to the Government of India in the Home Department under cover of a separate letter.

Progress Report of Forest Administration in Ajmere-Merwara for the year 1882-83; *by* LESLIE SEYMOUR SAUNDERS, *Esquire*, C.S., *Commissioner and Conservator of Forests.*

CHAPTER I.

SUMMARY OF ADMINISTRATION.

There has been no change in the Permanent Establishment during the year; the proposal as to the revised and improved scale of the Subordinate Forest Establishment was submitted for the sanction of the Government of India with this Office No. 28 F., dated 20th May 1882, but no sanction has been received up to date. A superior Officer, Mr. A. E. Lowrie, Sub-Assistant Conservator, was transferred from the School Circle to this District; he joined on the 19th January 1883, and, after a preliminary inspection of the Ajmere Reserves, he was directed to inspect some new tracts which were proposed to be taken up in Ajmere and Merwara. After his return

from camp, Major Bailey, R.E., Conservator of the School Circle, our professional adviser, kindly came down to Ajmere, and drew up a Note, dated 9th March 1883, on the proposed re-organization of the Forest Department of Ajmere and Merwara. There was some delay in printing it, and on 29th March I issued orders putting Mr. Lowrie in charge of the forests under the Assistant Commissioners. (Copies of Major Bailey's Memorandum and my orders accompany this Report for ease of reference.) After the close of the year, the Local Government approved of the proposals made jointly by Major Bailey and myself, and Mr. Lowrie, who has since been gazetted as Officiating Assistant Conservator, 3rd grade, is now practically in charge of the forests of Ajmere and Merwara. It is, however, very desirable that the Assistant Commissioners shall be consulted in all that is done. Mr Moir's Inspection Report of 1882 was not received till October 1882, and was not in print till January 1883. Many of the suggestions contained in it were found useful, and are being carried out. His proposals for taking up new Forest Reserves were kept back till a Settlement Officer had been appointed. Mr. Whiteway submitted a Note on the Rajgarh tract, dated 30th January 1883, and in this Office No. 165 F. dated 1st March, I reported that Mr. Lowrie had been directed to roughly demarcate the tract and prevent wood being cut and carried off.

2. The other tracts in Merwara were examined by the Settlement Officer and Mr. Lowrie, and reported upon in letters from this Office No. 175 dated 14th March and No. 192 dated 30th March.

3. The following tracts have now been temporarily demarcated by the Forest Officer, and, after all complaints have been disposed of, will probably be acquired under the existing Forest Regulation :—

District.	Name of Tract proposed to be taken up.	Approximate area of the Tracts.
		Acres.
Ajmere	Rajgarh	2,900
Merwara	Banjari and Mandlan	4,560
	Amner Kukra ...	3,000
	Sheopura extension ...	1,000
	Total ...	11,460

4. The Makarwali and Hokran tracts referred to in paragraphs 54 and 55 of Mr. Moir's last Inspection Report were also inspected by Mr. Lowrie in company with the Settlement Officer, but no proposals have as yet been sent in. It is possible that both these tracts may be taken up next season, together with some others of small acreage; but it is not very probable that more than 100,000 acres will be available as Reserves.

5. As regards the Kotkarana or Jawaja tract mentioned in paragraph 60 of Mr. Moir's Report, both Mr. Lowrie and the Settlement Officer are of opinion that there is no land there which could conveniently be taken up. Though the piece proposed is suitable in many respects and contains no cultivation, yet the village cattle in the neighbourhood would be unduly pressed.

6. Besides these tracts, there is no doubt that other suitable spots may be found during the coming Settlement which would be well worth taking up either as Forest or Village Reserves. The subject of extending the Forest Reserves and creating Village

Reserves will not be lost sight of, and every effort will be made so far as possible to comply with the wishes of the Government of India on this subject.

7. The cost of the Establishment compared during the past two years is given below :—

	1880-81.	1881-82.	1882-83.
	Rs.	Rs.	Rs.
Superior Officers	1,797	1,498	700
Protective Establishment	3,526	4,203	4,223
Office Establishment	1,415	1,323	1,334
Total ...	6,738	7,024	6,257

The charges under the head "Superior Officers" show a marked decrease compared with the figures of last year. This is owing to there being no Superior Officer for about nine months of the year in the District. The expenditure under the other two heads shows a trifling increase, but does not call for any remarks.

8. No Officer was deputed this year from the School Circle to inspect the Ajmere Reserves, though Major Bailey, as before reported, paid us a short visit in March. Mr. Moir having been deputed to visit the Punjab, his services were not available.

CHAPTER II.

AREAS AND BOUNDARIES OF RESERVES.

Area.

9. The area permanently acquired remains the same as in last year—viz., 77,875 acres, or 122 square miles, as detailed in Form No. 49.

10. The plot of ground forming the deserted Nursery at Ajmere has not been disposed of as yet. Rs. 445 only were offered for it, but, as this sum was a good deal below what the land and sinking the well originally cost, the sale was not confirmed.

Boundaries.

11. The boundaries of the blocks remain unaltered. The alteration to the boundary of the Srinagar tract, alluded to in paragraph 9 of last year's Report, has not been carried out; but it has been decided to fence the boundary along that portion of the block where the cattle now graze during eight months of the year, from November to June. The villagers have agreed to pay the entire cost of the fencing.

12. The boundary pillars are in good order, but require renumbering; this, the Assistant Conservator reports, will be done next season.

13. The survey of the boundary of the Dewair tract, though ordered, has not yet been carried out. Surveying instruments were sent for from the Superintendent of Forest Surveys for the purpose; the erection of the pucca boundary pillars around the Dewair tract has been postponed, pending the new Settlement, as the boundary lines will require certain alterations, and so there is not much use in carrying out the survey till the line is finally laid down.

14. A portion of the boundary of the Biliawas tract, on the Meywar border, was made the subject of dispute by the Thakur of Bednore. This line had been settled by the Resident of Meywar and Captain Robertson, the late Assistant Commissioner, Merwara, in 1878; but the boundary pillars had not been properly erected. It is now reported that the pillars will be erected according to the decision made by those Officers, and the difference in the area due to this alteration in the boundary will be noted in next year's Report.

15. The expenditure under the head A. VIII.a, "Demarcation," has been little or nothing.

Breaches of Forest Rules.

16. The following table shows the prosecutions and convictions of the year, as compared with those of the preceding year :—

District.	Prosecutions.				Convictions.				Percentage of convictions.			
	1881-82.		1882-83.		1881-82.		1882-83.		1881-82.		1882-83.	
	Cases.	Persons.	Cases.	Persons.	Cases	Persons	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.
Ajmere	61	141	49	89	54	130	41	67	88 52	92·19	83·36	75·27
Merwara ..	41	142	13	22	36	108	12	22	87 80	76 05	100·00	100 00
Total ..	102	283	62	111	90	238	53	89	88·23	84 09	86·88	80·18

17. A considerable decrease in the number of prosecutions and convictions is visible. This is principally attributed to the fact that the zemindars were sufficiently supplied with grass and wood for their actual requirements, and therefore they had no necessity for appropriating, in an unauthorized way, wood and grass ; hence followed a decrease in the number of cases.

The detail as to the nature of cases is given in Statement No. 52.

The fines inflicted and realized amounted to Rs. 134-9-0 (Rs. 63-1-0 in Ajmere and Rs. 71-8-0 in Merwara).

Confiscated tools were sold for Rs. 11-11-6 (Rs. 4-8-6 in Ajmere and Rs. 7-3-0 in Merwara).

18. The number of cattle impounded from the various forest tracts during the year, and the amount due on account of half the receipts from the pound fund, as compared with last year, are shown in the following table :—

District.	Number of cattle impounded in		Half the income from fines on cattle impounded.				Total realizations of the year on account of last and current year.
				1882-83.			
	1881-82	1882-83.	1881-82	Realized in 1882-83.	Realized after close of year.	Total	
			Rs.	Rs.	Rs.	Rs.	Rs.
Ajmere	2,022	1.320	*216	141	1	142	233
Merwara	3,793	2,410	345	219	.....	219	219
Total	5,815	3,730	561	360	1	361	452

Difference of Rs. 10, owing to this sum being credited direct by District Superintendent, Police, without intimation being sent.

19. In Ajmere the tracts have not been opened for grazing. In Merwara, as mentioned in last year's Report, certain tracts were thrown open for four months for grazing on payment of fees, and hence followed a considerable decrease in the number of cattle impounded and the amount of fine realized on that account. By this arrangement, wilful trespass has considerably diminished, and the result has, I think, proved satisfactory, and has certainly been less harassing to the villagers.

20. Every endeavour should, however, be made to reduce this grazing to a moderate number of head of cattle. Each year will see the villagers introducing more and more cattle, if they feel confident of getting powers of grazing during these four months; each year they ask to be admitted earlier and earlier into the Reserves, and I fear I was looked on as being very hard in not allowing grazing to begin before the 1st March this year. It is desirable that the number of cattle which shall be grazed in each tract should be strictly limited, so that at no time shall we find for the remainder of the year (if our rains fail us) that our cattle cannot be kept alive.

The total realizations of the year amounted to Rs. 233 in Ajmere and Rs. 219 in Merwara.

Fire Protection.

21. The year was a very favourable one for fire protection, only 6¼ acres were burnt in the Mohwa tract and 7 acres in the Todgarh tract. In the former case the fire occurred through the carelessness of some of the villagers while cutting grass; the case could not be proved against any one; grass only was damaged. The latter tract caught fire twice; the first conflagration took place through the negligence of some herdsmen, and the second while the villagers were burning the firelines; both these fires were extinguished by the villagers before any considerable damage occurred.

22. There were several fires in the Marwar and the Meywar territories, which swept through large portions of their forests. These fires touched our firelines in the Ans Pahar tract and in the Bagri block of the Todgarh tract, but were fortunately checked by them.

23. The usual firelines were constructed at a cost of Rs. 408-6-9, of which Rs. 372-6-9 were spent in Merwara during the official year and Rs. 36 in Ajmere after the close of the year.

The total cost of fire conservancy during the year ending 30th June 1883 amounted to Rs. 605-10-5 (Rs. 115-15-2 in Ajmere and Rs. 489-11-3 in Merwara), against Rs. 639 last year. Of this sum, Rs. 408-6-9 were spent on clearing and burning firelines, and Rs. 197-3-8 on the pay of fire-watchers. The strips 10 feet wide along the firelines were cleared by the villagers, who in payment for their labour were allowed to remove grass, &c., from the line. In Ajmere, owing to the exceptionally good falls of rain during the end of May 1882, all danger from fire was removed, so that there was no necessity to retain the services of the fire-watchers after that date.

Fencing and other Works.

24. No new fencing was constructed during the year under review.

With reference to paragraph 3 of the Government of India's orders on last year's Report, regarding fencing the unfenced boundaries of the various tracts, detailed enquiries are being made, on completion of which necessary steps will be taken in the matter.

25. The following table gives the length of the fencing repaired, and the amount spent thereon, during 1882-83 :—

Tracts.		Length repaired.				Cost.			
		Cactus fencing.	Dry stone wall.	Mud wall.	Total.	Cactus.	Dry stone wall.	Mud wall.	Total.
		R. ft.	R. ft.	R. ft.	R. ft.	Rs.	Rs	Rs	Rs.
Ajmere ..	Mohwa Bir .	10,110	...	...	10,110	119	..	..	119
	Nag Pahar ..	10,873	...	...	10,873	91	...	.	91
	Rajosi ...	2,934	...	...	2,934	32	...	...	32
	Danta ..	6,690	...	.	6,690	55		..	55
	Srinagar ...	4,655	...	...	4,655	32	...		32
	Total ...	35,262	..	...	35,262	329	..	.	329
Merwara	Dilwara and Chang Birs.	9,990	...		9,990	47	...	..	47
	Chang tract ...	...	220	...	220	...	4	..	4
	Beawar Nursery ...	...	.	2,557	2,557	. .	.	15	15
	Total ...	9,990	220	2,557	12,767	47	4	15	66
Grand Total ...		45,252	220	2,557	48,029	376	4	15	395

26. In Ajmere the cost of fencing per 100 R. ft. was As. 14-11, against As. 9-2 last year. In Merwara the average cost for repairs to fencing, including drystone and mud walling, amounted to As. 8-3, against As. 7 in previous year.

The stone walling in Ajmere was in good order and as usual, though more expensive at first, it required very little repairs. It is proposed, in addition to planting *Euphorbia* branches along the boundary, in future to try whether we shall be more successful by sowing the seed during the rains in places where the fence has dried up.

Inspection Paths.

27. Nothing was spent in repairing the inspection paths either in Ajmere or Merwara.

In Merwara a forest pathway, 7½ miles in length, towards Kachbali, and another, 12½ miles long, passing through the Ans Pahar and Biliawas tracts, starting from the Bar village and joining the main Beawar and Todgarh road near Taragarh, were laid out for us by Mr. Bhagat Singh, Assistant Engineer. The partial construction of these paths will be undertaken during the current year.

Buildings.

28. The expenditure on buildings was Rs. 610, as detailed below:—

		Rs.	As.	P.
Ajmere	New huts for gardeners in the Ajmere Nursery . .	370	7	3
	Reconstruction of a Forest Guard's hut at Rajosi .	122	3	3
	Repairs to six chaukis	63	0	0
	Total ...	555	10	6
Merwara ...	Construction of two huts	47	15	6
	Repairs to huts	6	2	3
	Total	54	1	9
	Grand Total	609	12	3

The buildings are generally in good order.

Plantations.

29. The expenditure under head A. VIII.d, "Plantations," amounted to Rs. 1,757, against Rs. 4,244 last year; this decrease is due to expenditure on the Ajmere Nursery having ceased. Last year the Nursery was being stocked, and expenditure was therefore greater than it will be in future years.

30. The cost of plantations in the Reserves was Rs. 304, or Rs. 756 less than the previous year, as detailed below:—

		1881-82.	1882-83.		
		Total Plantation charges.	Actual expenditure.	Proportionate charges of Nursery expenses.	Total.
		Rs.	Rs.	Rs.	Rs.
AJMERE	Mohwa and Madar Hill	76	...	.....	...
	Nag Pahar	77	14	.....	14
	Taragarh Valleys	235	75	.....	75
	Srinagar Bir	102	6	.....	6
	Danta ...	3	..		...
	Shikast Masjid	62	59	..	59
	Total ...	555	154	.....	154
MERWARA	Chang Tract ...	95	59	.....	59
	Hattun and Shoopura	50	..	.	..
	Biliawas	23	..	.....	..
	Todgarh	26	...	.. .	.
	Dilwara and Chang Birs	160	56	20	76
	Borwar and Kotra	33	...	....	.
	Parade Plantation	118	...	15	15
	Total ...	505	115	35	150
	GRAND TOTAL ...	1,060	269	35	304

This decrease is attributed to the discontinuance of planting operations. Only a small number of trees were planted in certain tracts in Merwara, except in the Dilwara and Chang Birs and Parade Plantation, where 745 and 565 trees were planted out respectively.

31. In Ajmere an area of 58 acres was excluded, owing to failures; the total area of Plantations on 31st March 1883 was therefore 341 acres (as detailed in Form No. 50).

32. In Ajmere the trees planted in the different blocks in previous years are, as a rule, doing well.

Those on the top of Nag Pahar are out of danger from ordinary drought; they suffered somewhat from the heavy frost this year. The mangoes planted on the Pohkar side of the Nag Pahar are doing well, and, though only 7 to 8 years old, have begun to bear fruit. The planting of mangoes should be largely encouraged.

The trees planted during former years are also doing well in the Bari Nal of the Taragarh block, the shisham and siris having attained almost as large a size as those grown for a similar number of years in any other Forest Division; The average size of trees being—shisham girth 1 foot 8 inches, height 30 feet; siris girth 1 foot 6 inches, height 25 feet. This result is extremely good.

33. The total cost of the Ajmere Nursery, including Rs. 453 on account of purchase and feed of cattle, buildings and tools, &c., amounted to Rs. 1,494, against Rs. 3,049 last year, in which year the charges were quite exceptional, as explained above.

34. The Nursery continued under the supervision of Mr. Parsons, who paid considerable attention to the raising of a number of trees, both exotic and indigenous.

35. Of the exotics, *Casuarina equisetifolia*, *Acacia sumatrana*, and *Eucalyptus rostrata* are doing well, especially the *Casuarina*, which with the *Eucalyptus* appear to give every promise of succeeding well here. Of other sorts, numbers of plants of *Pongamia*, nim, tamarind, siris, sissoo, and a few others, are doing very well, and are ready for transplanting. During the year, 912 trees were disposed of gratis from the Nursery (361 to householders and villagers, and 551 on district roads). Besides this, 262 fruit trees were sold to purchasers for Rs. 65-8-0.

36. There were some 16,263 plants of sorts ready for distribution from the Ajmere Nursery at the close of the year.

The seed of *Pinus australis* received from the Government of India, about which a report was called for in Secretary to Chief Commissioner's letter No. 2092 S. dated 15th August 1882, did not germinate. There is little doubt the seed was bad.

The seed of *Eucalyptus corynocalyx*, also sent by the Government of India, germinated freely, but numbers of the plants were killed during the hot weather; the surviving plants died during the rains.

37. The cost of the Beawar Nursery amounted to Rs. 385, against Rs. 301 last year.

2,351 plants are reported to have been disposed of as follows:—

Municipal and district roads ..	... ..	950
Dilwara Bir and Parade Plantation	... ...	1,310
Gratis to applicants ...	... ..	91
	Total ...	2,351

9,858 plants of sorts were at the close of the year ready for transplanting in the Beawar Nursery.

A few only of the exotic trees planted in the Nursery are doing well, amongst which Carob trees may be specially mentioned.

Sowing Operations.

38. The cost of collecting and sowing seeds in various Forest tracts was Rs. 120 (Rs. 112 in Ajmere and Rs. 8 in Merwara).

In Ajmere 43 maunds 4 seers of the seeds of kala siris, khair, salar, arinj, babul, nim, and hingota were sown. The greater portion of this was sown broadcast all over the hill sides, the rest in ploughed land. Of the different seeds sown, only the babul has germinated. Numbers of the seedlings that did come up were, however, killed by the very severe frost in January and February. Some few of the seedlings of the previous year's sowings are doing well.

In Merwara 13 maunds 17 seers of the seeds of amaltas, babul, charal, imli, jinja, khajur, mohwa, nim, siris, and jaman were sown in pits and broadcast; the result was generally good; but the winter frost and summer heat has damaged the seeedlings to a great extent

Khajur seedlings did not suffer either from frost or heat, nor do they require watering.

Coppice Experiment.

39. The half-acre cut in June 1881 in the Mohwa Bir block is doing very well, the shoots being on an average 5 feet high. The kinds of trees cut are—ber, dasan, daukra, and kumpta, all of which evidently coppice freely.

The experimental cutting in February 1881 in the Taragarh block has not given as good results as the cutting in the Mohwa Bir: this is owing to the inferior and stony nature of the ground.

The experimental cutting of salar on the top of Nag Pahar has also proved successful; the shoots sent out are healthy, averaging 4½ feet in height, though only a year old.

40. In Merwara the dhaukra experimental cuttings, alluded to in last year's Report, have generally attained a height of 8 feet and a girth of 2 inches; the trees cut down in the Bagri block of the Todgarh tract vary in height from 3 to 4 feet.

In Chang the trees cut down on an area of 1 acre on 20th January 1882 have coppiced. The shoots are not so good as those in the Todgarh tract.

Free Grant of Forest Produce.

41. In Ajmere about 5,000 grass permits were issued to the villagers for cutting grass in the Srinagar, Rajosi, Taragarh, and Madar Hill blocks for the usual 6 weeks from October to December. The grass was freely cut by the men.

42. In Merwara, the zemindars were allowed to cut grass for a period of 5 months, from 1st November to the end of March. 1,528 tickets were issued to the villagers of Beawar Tehsil, and in Dewair and Todgarh the zemindars were permitted to cut grass without tickets.

The grass removed from the Merwara Forests by the villagers is estimated at 340,000 head loads, which, at even 6 pies per load, cannot be valued at less than Rs. 10,625.

43. The following table shows the number and quantity of wood supplied to the zemindars for their household and agricultural requirements:—

Name of Tract.	Wood for house building.			Wood for agricultural requirements.				Fuel.
	Dandas.	Kamris	Ballis.	Khair.	Dhaukra.	Salar.	Gob.	
Todgarh	8,455	150	70	57	23	8	5	...
Dewair	1,370	...	12	...	...	45	...	...
Chang	1,060	1,742	48	...	32	...	...	...
Borwar and Kotra ...	510	200	6	...	62	...	...	110 mds.
Biliawas ...	270	...	3	...	...	...	...	...
Total ...	11,665	2,092	139	57	117	53	5	110 mds.

Besides this, 5,217 dandas, kamris, ballis, bamboos, and salar trees, valued at about Rs. 150, were supplied gratis for the construction of Police chaukis, outposts for the Merwara Battalion guards, schools, and dispensaries.

Yield and Working.

44. In Ajmere Rs. 290 were realized from sale proceeds of dry cactus wood, &c., and the grazing and sale of standing grass brought in Rs. 2,463. Of this sum, the grass from the Mohwa Bir and the Nag Pahar, two nuzul tracts, contributed Rs. 681 and Rs. 1,225 respectively. A quantity of grass was also sold to the Ajmere Municipality from the Srinagar tract, after the villagers had cut as much as they were able to carry away.

Rs. 178 were realized from the sale proceeds of fruit trees and fruits, &c.

In Merwara Rs. 107 were realized from sale proceeds of charcoal from the Chang and Todgarh tracts. In the former tract the charcoal was manufactured from the wood cut experimentally from an area of 1 acre.

Rs. 110 were realized from the dry wood, &c., removed by Government agency from the Chang, Dilwara Bir, Borwar, and Kotra tracts.

45. The following table shows the forest produce removed by purchasers from the various Merwara forest tracts :—

Tract.	Kamris, Dandas, and Ballis	Firewood, miscellaneous.	Grass.	Bamboos.	Honey and Wax.	Amount.
	No.	Approximate weight.		No.	Seers.	Rs.
Chang	20,732	3,096	...	...	...	698
Dilwara Bir	...	...	28 cart loads.	...	..	84
Biliawas	...	4,057	...	...	11	295
Ans Pahar	200	4,755	...	...	13	388
Borwar and Kotra	...	21	50 bullock loads.	...	11	21
Todgarh	9,113	1,260	...	6,400	60	659
Dewair	...	...		40	36	16
Sheopura and Hattun ...	900	...	...	...	...	18
Total ...	39,945	13,189	28 cart loads. 50 bullock loads.	6,440	131	2,179

4,878 cattle are reported to have been admitted in the Todgarh, Biliawas, Dewair, and Sheopura tracts for grazing during the period of 4 months from 1st March to 30th June 1882.

Of this number, 197 were allowed to graze free of any charge, and for the rest Rs. 837 was realized from the villagers, at the rate of As. 2 per cow or bullock and As. 4 per buffalo.

The suggestion contained in paragraph 52 of Mr. Moir's Inspection Report of 1882, proposing to levy grazing dues on Banjara bullocks which carry goods through the Todgarh and Dewair passes, was put in force from April 1882. A man on Rs. 7 per mensem was entertained to collect the fees in the Dewair Pass, while the Lambardars and Patels were ordered to levy the dues in the Kachbali and Piplee Ghatâs of the Todgarh tract. The number of cattle crossing these passes is reported to have been 61,921. Of this number, 139 were camels, sheep, and goats, which were charged 3 pies per head, and the rest were bullocks, buffaloes, donkeys, and ponies, on which a fee at the rate of 1 pie per head was levied. The amount of fees amounted to Rs. 324, giving a net income of Rs. 252.

Financial Results.

46. The subjoined table compares the figures of 1882-83 with those of the past four years :—

Main Heads.	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.
	Rs	Rs.	Rs.	Rs.	Rs.
Receipts	1,241	1,861	1,124	4,066	7,126
Expenditure ... A. Conservancy and Works ...	5,182	5,280	4,755	5,631	3,689
Expenditure ... B Establishments ..	8,263	8,470	7,668	8,323	7,595
Expenditure ... Total ..	13,445	13,750	12,423	13,954	11,284
Deficit .. .	12,204	11,889	11,299	9,888	4,158

From the above it will be seen that the results of the year under review have, from a financial point of view, been very satisfactory. The receipts of the year, Rs. 7,126, are the highest figure that has been

obtained since the formation of these Reserves, and there seems no reason why now, in a few years to come, our receipts should not equal and perhaps exceed our expenditure, an event which, when we took up these Reserves, was certainly never anticipated. Expenditure has this year decreased considerably, partly because arrangements were not put in force during the year for providing accommodation for the Assistant Conservator.

The principal sources of our income are—

				Rs.
Firewood and charcoal	...	...	...	2,472
Grazing and grass	...	...	...	3,721
Fines and forfeitures	...	...	...	598
Minor produce	...	...	...	242

With the exception of the head "Fines and forfeitures," there is a considerable increase in other heads over the previous year.

The expenditure under "A. Conservancy and Works" has been Rs. 1,942 less than 1881-82, the principal savings being under the sub-head "Plantations."

The charges under "B. Establishments" amounted to Rs. 7,595 against Rs. 8,323 in the preceding year, the decrease being chiefly under the head "Pay of Superior Officers," there being no Superior Officer here for about three quarters of the year.

CHAPTER III.

PROTECTED, UNRESERVED, AND DISTRICT FORESTS.

47. There are no protected, unreserved, and district forests in Ajmere-Merwara to come under this Chapter.

CHAPTER IV.

GENERAL REMARKS.

48. Forest work has so far progressed that a special Officer is required to look after the work. Mr. Lowrie has joined us this year, and he may, I trust, be allowed to remain here for some time to come. It was impossible for the Assistant Commissioners to superintend the general experiments required to be undertaken here, and the experimental cuttings and coppicing in particular, and I believe that in a very short time the income that will be obtained by closer supervision will far more than cover the extra expenditure of the deputation of such an Officer.

49. The extra area that can be taken up under the present Forest Regulation consists only of waste and hilly lands, and it is not very probable that more than 100,000 acres will be available eventually even for acquisition under that Regulation. The remarks made in the review of last year's Annual Report are somewhat misleading, I fear, on this subject, but I have hopes that something may be done towards inducing the villagers with large uncultivated areas, in the revision of the Settlement now going on, to set apart tracts as Village Reserves, for the more economical grazing of their own cattle. This can only be done with the assistance of another and amended Forest Regulation.

Annual Form No. 49.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Reserved Forests, 1882-83.

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1882.		Added during the year.	Excluded or transferred to other heads.	Area on 1st March 1883.		No. and date of notification of addition or transfer.	Remarks.
			Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.		
AJMERE	AJMERE ...	Mohwa and Madar Hill	2,812	4	...	...	2,812	4		
		Nag Pahar	2,660	4	...	...	2,660	4		
		Taragarh Valleys	1,016	2	...	...	1,016	2		
		Srinagar and Bir	3,575	6	...	...	3,575	6		
		Rajosi	1,260	2	...	...	1,260	2		
		Danta	1,244	2	...	...	1,244	2		
		Total ...	12,567	20	...	...	12,567	20		
MERWARA ...	MERWARA ...	Chang	2,341	4	...	...	2,341	4		
		Hattun and Sheopura	1,920	3	...	...	1,920	3		
		Biliawas and Taragarh	3,172	5	...	...	3,172	5		
		Todgarh and Barakhan	40,048	63	...	...	40,048	63		
		Dilwara and Chang Birs	235	...	...	...	235			
		Borwar and Kotra	3,923	6	...	...	3,923	6		
		Ans Pahar	1,466	2	...	...	1,466	2		
		Dewair	12,203	19	...	...	12,203	19		
		Total ...	65,308	102	...	...	65,308	102		
		Grand Total ...	77,875	122	...	...	77,875	122		

Annual Form No. 50.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Plantations, 1882-83.

Division.	Name of Plantation.	On 1st April 1882.		Added during 1882-83.		On 31st March 1883.		Remarks.
		Area.	Cost.	Area.	Cost.	Total Area.	Total Cost.	
		Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	
	Out of the area taken up under the Regulation.							
Ajmere	Mohwa and Madar Hill	83	7,920	—30	.....	53	7,920	Owing to failures, the areas have been deducted.
	Nag Pahar	24	8,552	— 6	14	18	8,566	
	Taragarh Valleys	98	9,068	—20	75	78	9,143	
	Srinagar Bir	8	1,009	— 2	6	6	1,015	
	Danta	1	3	.....	.....	1	3	
	Total ...	214	26,552	—58	95	156	26,647	
Merwara	Chang tract	15	1,627	.....	59	15	1,686	
	Hattun and Sheopura	30	1,505	.....	.....	30	1,505	
	Biliawas and Taragarh	12	987	.....	.....	12	987	
	Todgarh and Barakhan	46	985	.....	.....	46	985	
	Borwar and Kotra	2	33	.....	.....	2	33	
	Dilwara and Chang Birs	66	990	.....	76*	66	1,066	* Includes Rs. 20 on account of share of Nursery charges.
	Total ...	171	6,127	.....	135	171	6,262	
	Grand Total ...	385	32,679	—58	230	327	32,909	
	Tracts not taken up under the Regulation.							
Ajmere	Shikast Masjid	6	1,299	.....	59	6	1,358	
Merwara	Parade Plantation	8	1,712	.....	15†	8	1,727	† Share of Nursery charges.
	Total ...	14	3,011	.....	74	14	3,085	
	Total Plantations ...	399	35,690	—58	304	341	35,994	‡ Ajmere ... ... 300; Merwara ... ... 27 = 327
	Nurseries.							
Ajmere	Ajmere Nursery	10	4,534	.....	741	10	5,275	
Merwara	Beawar Nursery	4	200	.....	265	4	465	
	Total ...	14	4,734	.....	1,006	14	5,740	§ Ajmere ... ... 112; Merwara ... ... 8 = 120
Ajmere-Merwara	Written to profit and loss for plants supplied gratis ...	.....	524	.....	327‡	.....	851	
	Cultural operations	.....	89	.....	120§	.....	209	
	Grand Total ...	413	41,037	—58	1,757	355	42,794	

Form No. 51.—[*Suggested.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Forest Tracts protected from fire during dry season of 1883 (*to accompany Report for* 1882-83).

Division.	Forest Tracts.	Up to 30th June 1882.		During dry season of 1883.				Total cost up to 30th June 1883.	Year when protection commenced.	Remarks.
		Area actually protected.	Total cost.	Area attempted to be protected.	Failures.	Actually protected.	Amount expended.			
		Acres.	Rs.	Acres.	Acres.	Acres.	Rs.	Rs.		
Ajmere	Mohwa and Madar Hill	2,812	56	2,812	6	2,806	...	56	.....	
	Nag Pahar	2,660	103	2,660	...	2,660	31	134	1880	
	Taragarh Valleys	1,016	270	1,016	...	1,016	26	296	1874	
	Srinagar Bir	3,575	67	3,575	...	3,575	...	67	1880	
	Rajosi	1,260	126	1,260	...	1,260	39	165	1880	
	Danta	1,236	24	1,244	...	1,244	20	44	1882	
	Total ...	12,559	646	12,567	6	12,561	116	762	.....	
Merwara	Chang	2,341	56	2,341	...	2,341	31	87	1881	
	Hattun and Sheopura	1,920	4	1,920	...	1,920	4	8	1882	
	Biliawas and Taragarh	3,172	518	3,172	...	3,172	58	576	1874	
	Todgarh and Barakhan	40,048	3,634	40,048	7	40,041	275	3,909	1874	
	Dilwara and Chang Birs	235	.....	235	...	235	...	.....	.....	
	Borwar and Kotra	3,923	19	3,923	...	3,923	16	35	1882	
	Ans Pahar	1,466	300	1,466	...	1,466	28	328	1877	
	Dewair	12,203	255	12,203	...	12,203	78	333	1881	
	Total ...	65,308	4,786	65,308	7	65,301	490	5,276	.....	
	Grand Total ...	77,867	5,432	77,875	13	77,862	606	6,038	.....	

Charged in previous years	5,289
Ditto in 1882-83	575
Ditto in 1883-84	174
Total	6,038

Annual Form No. 52.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE–MERWARA.

Prosecutions for breaches of Forest Rules during 1882-83.

Forest Division and Civil District.	Cases pending from 1881-82.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
		Injury to forest by fire.	Unauthorized felling, or appropriation of wood and minor forest produce.	Grazing without permission, or in tracts in which grazing is prohibited.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Ajmere	...	...	42	5	2	49	49	41	67	8	22	49	89	...
Merwara	...	...	12	1	...	13	13	12	22	...	...	12	22	1
Total ...	..	...	54	6	2	62	62	53	89	8	22	61	111	1

Annual Form No. 53.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Summary of Revenue and Expenditure for 1882-83.

Budget Heads.	Direction.
REVENUE.	Rs. As. P.
I.—Timber and other produce removed from the forests by Government agency—	
a. Timber	...
b. Firewood and Charcoal	217 7 5
c. Bamboos	.....
d. Sandalwood	.....
e. Grass and other Minor Produce	.....
II.—Timber and other produce removed from the forests by consumers or purchasers—	
a. Timber	.....
b. Firewood and Charcoal	2,254 7 1
c. Bamboos	65 12 0
d. Grazing and Fodder Grass	3,720 8 5
e. Other Minor Produce	241 15 0
III.—Confiscated, drift, and waif wood	1 6 0
IV.—Revenue from forests not managed by Government—	
a. Duty on Foreign Timber and other Forest Produce	.....
b. Revenue from Shared and Private Forests ...	.....
V.—Miscellaneous—	
a. Fines and Forfeitures	598 6 6
b. Refunds	....
c. Other sources	26 8 0
TOTAL RECEIPTS ...	7,126 6 5
EXPENDITURE.	
A.—Conservancy and Works.	
I.—Timber and other produce removed from the forests by Government agency—	
a. Timber	....
b. Firewood and Charcoal	48 4 6
c. Bamboos	.....
d. Sandalwood	.....
e. Grass and other Minor Produce	.....
II.—Timber and other produce removed from the forests by consumers or purchasers	107 11 11
III.—Confiscated, drift, and waif wood ...	.....
IV.—Revenue from forests not managed by Government—	
a. Duty on Foreign Timber and other Forest Produce	.....
b. Revenue from Shared and Private Forests ...	.....
V.—Rent of leased forests, and payments to shareholders in forests managed by Government	...
Carried over ...	156 0 5

Annual Form No. 53.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Summary of Revenue and Expenditure for 1882-83—concld.

Budget Heads.	Direction. Rs.	As.	P.
EXPENDITURE—concld.			
Brought forward ...	156	0	5
VI.—Live Stock, Stores, Tools and Plant—			
a. Purchase of Cattle	65	0	0
b. Feed and keep of Cattle	28	5	10
c. Stores, Tools and Plant	87	3	0
VII.—Communications and Buildings—			
a. Roads and Bridges	.....		
b. Buildings	609	12	3
c. Other Works	.....		
VIII.—Demarcation, improvement, and extension of forests—			
a. Demarcation	6	2	0
b. Compensation for Land and Rights	.....		
c. Surveys and Working-Plans	1	1	0
d. Plantations	1,756	13	3
e. Protection from Fire	574	14	10
f. Other Works	395	3	6
IX.—Miscellaneous—			
a. Refunds	.....		
b. Law Charges	.....		
c. Other Charges	8	7	0
Total A.—Conservancy and Works ...	3,688	13	1
B.—Establishments.			
I.—Salaries—			
a. Conservator	.....		
b. Superior Officers	700	0	0
c. Subordinate Forest and Depot Establishments ...	4,222	10	6
d. Office Establishments	1,333	13	9
e. Deputation and Special Allowances	.....		
II.—Travelling Allowances—			
a. Conservator	.....		
b Superior Officers	579	5	9
c. Subordinate Forest and Depot Establishments ...	279	6	10
d. Office Establishments	104	7	2
III.—Contingencies—			
a. Stationery	11	9	6
b. Carriage of Tents and Records	118	4	4
c. Rents, Rates, and Taxes	.....		
d. Pay of Police Guards	.....		
e. Official Postage	30	2	6
f. Sundries	215	0	0
Total B.—Establishments ...	7,594	12	4
GRAND TOTAL OF EXPENDITURE ...	11,283	9	5

Annual Form No. 54.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Account Current for the year 1882-83.

Dr. | Cr.

	Rs.	As.	P.		Rs.	As.	P.
To Cash Balance	.....			By Expenditure, as per details in the Annual Summary ...	11,283	9	5
„ Revenue, as per details in the Annual Summary ...	7,126	6	5	„ Forest Cash Remittances (Local)— Remittances to State Treasuries...	7,126	6	5
„ Forest Cash Remittance (Local)— Remittances from State Treasuries	10,747	15	7				
„ Advances Recoverable	3,542	10	0	„ Advances Recoverable	3,471	4	9
„ Account Current with other Governments— Government of the North-Western Provinces and Oudh ...	464	4	7	„ Cash Balance	.....		
Total ...	21,881	4	7	Total ...	21,881	4	7

Annual Form No. 55.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Outstandings and Liabilities on account of Contractors and Disbursers for 1882-83.

Division.	Department Debtor.			Department Creditor.			Balance due	
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstandings).	By Department (Liabilities).
		Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.	Rs. As. P.
Ajmere	.....	3,542 10 0	3,542 10 0	336 9 0	3,471 4 9	3,807 13 9	456 13 4	191 9 7
Total ...	.....	3,542 10 0	3,542 10 0	336 9 0	3,471 4 9	3,807 13 9	456 13 4	191 9 7

Annual Form No. 56.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Revenue received and Outstandings on account of Revenue during 1882-83.

Division.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realised during year.	Balance due to the Department at end of year
			Rs. As. P.	Rs. As. P.	Rs. As. P.	
Ajmere	Timber and other produce, &c. ..	.....	7,126 6 5	7,126 6 5	7,126 6 5	.....
	Total ...	...	7,126 6 5	7,126 6 5	7,126 6 5	.....

APPENDIX.

MEMORANDUM.

WE have been waiting, before issuing orders, for Major Bailey's Report about arrangements for future forest management in Ajmere and Merwara. When he was down here, it was virtually decided, however, that Mr. Lowrie's services were to be permanently retained here.

The Report is being printed, but there may still be some delay before the final orders of the Local Government are received on the different questions touched upon therein; but as Mr. Lowrie is on the spot and is available for forest work, and as Munshi Chattan Lal's services are most urgently required for irrigation and settlement questions by Mr. Whiteway, it is desirable that he should be relieved of his duties with regard to forest work in Ajmere from 1st April. The Assistant Commissioner of Ajmere is therefore authorized to make use of Mr. Lowrie's services and place him in direct charge of the Ajmere tracts, and the Assistant Commissioner of Merwara can direct Munshi Sahib Roy to make his reports in future through Mr. Lowrie. Major Bailey, with my approval, is to make proposals to prevent the Assistant Commissioner from being entirely relieved from charge of the forests, while yet placing Mr. Lowrie in a better and more independent position than has hitherto been held by the Native subordinates. For the present, however, Mr. Lowrie should act under the control of the Assistant Commissioners, as has hitherto been the custom, though I feel no doubt that both Mr. FitzGerald and Mr. Pears will be able to give him a greater freedom of action than has hitherto been allowed to Munshi Chattan Lal and Sahib Roy.

Mr. Lowrie will submit weekly diaries (separate for Ajmere and Merwara) through the Assistant Commissioners, which will, with reports, &c., in future reach this Office through the Assistant Commissioners.

The direct charge of the Ajmere Forest Nursery will also be transferred from the Agriculture and Garden Superintendent to Mr. Lowrie from the same date.

L. S. SAUNDERS,
Commissioner.

Dated the 29th March 1883.

Note relating to the Forests of Ajmere and Merwara, by MAJOR F. BAILEY, R.E., *Conservator of Forests, School Circle, North-Western Provinces; dated the 9th March* 1883.

Arrival of Mr. Lowrie, and proposed arrangements consequent thereon.

1.—MR. LOWRIE arrived on the 18th January, and has completed a preliminary inspection of the forests of both districts. It is desirable that he should now be placed in a position similar to that formerly occupied by Mr. Moir, and that he should be invested with the usual responsibilities of a Divisional Officer in respect of expenditure and revenue, the control of establishments, &c. It is, however, essential to maintain the interest and co-operation of the District Officers, without which it will not be possible for him to manage the forests with success; and with this object I suggest that all correspondence with the Commissioner on the following subjects should be carried on under "flying docket" through the District Officers, who should be invited to record their opinions freely, not only on the questions regarding which the correspondence thus passes

officially through their hands, but on any other subjects of special interest which come under their notice :—

No.	Subject.
1	Acts and Rules of Government.
2	Taking up new reserves, surrender of land, changes of boundary, démarcation.
3	Road side planting and groves.
4	Arms, shooting, game.
5	Cases, Civil.
6	„ Criminal.
7	„ Revenue.
8	Areas brought under fire conservancy.
9	Use of dispensaries.
10	Famine.
11	Free gifts of forest produce.
12	Irrigation.
13	Land taken up for public purposes.
14	Securities and deeds of agreement.
15	Leave of gazetted Officers.
16	Police.
17	Pounds.
18	Powers of Forest Officers.
19	Public roads and communications.
20	Rights in the forests.
21	Rewards paid to informers.
22	Transfer of charge of the forests.
23	Waste land.
24	Appointments, transfers of Rangers and Foresters.
25	Collection of grazing dues.
26	Annual plan of operations.

Mr. Lowrie should take every opportunity of personally consulting the District Officers on all matters which affect the interests of the population.

Head-quarters of Mr. Lowrie and Ranger Sahib Roy.

2. After consultation with Mr. Saunders, and after a consideration of all the circumstances of the case, I propose that the suggestion made in paragraph 14 of my Memorandum of the 1st March 1881 should now be carried out, and that Mr. Lowrie's head-quarters should be fixed at Ajmere, Ranger Sahib Roy's head-quarters remaining at Beawar. It will not, in my opinion, be possible to dispense with the services of the Ranger, who will be required to superintend the details of work in Merwara at times when Mr. Lowrie is necessarily engaged in Ajmere.

Establishment.

3. Mr. Moir's last proposals regarding the Forest Establishment are to be found at pages 30, 31, 33 of his last Report (spring of 1882). There is an error of Rs. 20 in the addition of the figures representing the total monthly expenditure proposed by him, and the totals should be 38 men costing Rs. 337 per mensem. Excluding the pay of Mr. Lowrie, it will now be necessary to add the following :—

		Rs.
(I.)	Ranger Sahib Roy	70
(II.)	Two Forest Guards for the new Amner tract, at Rs. 6 ...	12
(III.)	Two do. do. Banjari „ „ 6 ...	12
(IV.)	One do. do. Sheopura extension „ 6 ...	6
(V.)	Two do. do. Rajgarh tract, at „ 6 ...	12
	Total ...	112

The above tracts have not yet been finally taken up, but the establishment is required at once, and the 7 new Forest Guards may

be on the temporary list until final orders have been passed on the proposals, when they should be transferred to the permanent list. It is not possible at present to make any suggestion regarding the establishment required for the other tracts which are to be demarcated; this must wait until the areas to be reserved have been selected. The extra Forestership on Rs. 25 per mensem, provided by Mr. Moir in order to enable a man to be sent to the Forest School, may now be given up. Any man sent to the Forest School (and one should be sent as soon as possible) should be entertained on the temporary establishment List under the provisions of paragraph 2 of Circular by the Government of India, Home, Revenue, and Agricultural Department No. 37 F., dated 24th September 1879.

The present Office Establishment is as follows :—

		Rs.
1	Clerk in the Commissioner's Office ...	70
1	Munshi employed in Ajmere, with Munshi Chattan Lal	30
1	Chaprasi with Munshi Chattan Lal	6
1	Do. with Ranger Sahib Roy	6
	Total ...	112

The Clerk must remain in the Commissioner's Office, and one Chaprasi must remain with the Ranger. The Munshi and Chaprasi now with Munshi Chattan Lal can go to Mr. Lowrie, and he will require the following additional establishment, viz.—

		Rs.
1	Clerk	30
1	Chaprasi for his Office	6
	Total ...	36

An additional Munshi on Rs. 20 will also be required when the Irrigation Department Munshi now employed under the Ranger is withdrawn; he may be on the temporary list.

The present proposals therefore stand thus—

PERMANENT ESTABLISHMENT.

Forest

						Rs.
1	Ranger,	at Rs.	70	...	... ...	70
1	Forester,	„ „	20	...	... ...	20
5	do.,	„ „	15	..	... ...	75
2	Guards,	„ „	10	...	... ...	20
6	do.,	„ „	8	...	... ...	48
11	do.,	„ „	7	...	... ...	77
12	do.,	„ „	6	...	... ...	72
					Total ...	382

Office.

						Rs.
1	Clerk,	at Rs.	70	.	... ...	70
1	do.,	„ „	30	...	... ...	30
1	Munshi,	„ „	30	...	... ...	30
3	Chaprasis,	„ „	6	...	... ...	18
					Total ...	148

TEMPORARY ESTABLISHMENT.

Forest.

		Rs.
7	Guards, at Rs. 6	42

Office.

1	Munshi	20

Forest garden at Ajmere, and house for the Forest Officer.

4. The term "Forest Nursery", as hitherto applied to the new garden at Ajmere, is somewhat misleading. As explained in paragraph 5 of my Memorandum of the 1st March 1881, the objects of this garden are—1*st*, experimental planting and sowing of both indigenous and exotic trees; 2*nd*, the supply of young trees to villagers and others. Nurseries for plants intended to stock the forest must be made within the forests themselves or close to them. As regards the suitability of the present garden for the purposes which it is intended to serve, two drawbacks have been mentioned by Mr. Moir. The want of shade is one which would, I think, be felt anywhere at first; but shade for the protection of the young trees is now afforded by a crop of the castor-oil plant, and a few trees of rapid growth should, as suggested by Mr. Moir, be planted over the area as soon as possible. The following would be suitable trees, *Inga dulcis*, *Casuarina*, semel, farash, *Parkinsonia*. The quality of the water is a more serious matter. Some doubt has been felt as to whether a supply of good water from the Anasagar Lake can be made available, as some additional demands will probably be made on it for other and more important purposes. Mr. Saunders however tells me that there is a prospect of the water supply of the lake being considerably increased, and he thinks there is no doubt that good water can be brought to the garden; he also says that the water in the well next the house-site is much better than that which has hitherto been used for the garden, and that arrangements have been made to lead this water to the plants. Were any other site available in Ajmere, I should suggest the exchange of the land for a plot on which better water can be found; but, although the brackishness of the water is not universal throughout the environs of Ajmere, Mr. Saunders informs me that it will not be possible to obtain a more favourable site for the garden. As regards the rearing of trees for district purposes, the inferiority of the water at present supplied is not a very serious matter, as Mr. Parsons tells me that many kinds of trees flourish very well in the garden; and even should it turn out impossible to improve the supply of water, the species that now succeed would satisfy all requirements in this direction. For experiments with exotics or other trees that will not succeed in the present garden, the Commissioner will permit the use of some suitable plot within one of the Government gardens or elsewhere; an acre will suffice for the present. The garden should now be made over to Mr. Lowrie, and it would be a good plan to publish a vernacular notice, stating the conditions under which villagers and others can obtain plants from it. A building site has been reserved, and a house to serve as Mr. Lowrie's office and residence should now be erected; the estimate for this building amounts to Rs. 3,184. I understand that it will be possible to give Mr. Lowrie temporary accommodation at Beawar during the visits that he must necessarily pay to that place, in connection with the experiments that will be made there and for other work.

Scientific experiments.

5. The experiments to be undertaken may be thus briefly enumerated.

(*i.*) *Comparative observations regarding rainfall within and outside the protected areas* (see paragraph 56 of Mr. Brandis' Report).—There seems no reason why sets of rain gauges should not eventually be established at suitable sites near each forest chauki, the Foresters or Forest Guards being taught by Mr. Lowrie to keep the needful records; but at first it will suffice to select half a dozen localities which are physically the most suitable, the most intelligent Foresters being charged with the duty of recording the rainfall. The sites selected

should be accurately marked on the map by Mr. Lowrie, and 18 rain gauges and 6 measuring glasses should be indented for. At each station of observation there will be three rain gauges, one being outside the forest, one in a blank space within the forest, and one in the crown of a tree, lopped so as to leave the rain gauge free. The records should be commenced as soon as possible.

(*ii.*) *Comparative observations of temperature, humidity, and dew* (see Mr. Brandis' paragraph 57).—These observations are of a delicate nature, and the results will be misleading if they are not taken and recorded accurately. At first it will only be possible to have one pair of stations near Mr. Lowrie's head-quarters, and another near those of the Ranger. Mr. Lowrie should select the sites and mark them accurately on the map. The Clerk and Munshi must be taught to take the observations during Mr. Lowrie's and the Ranger's absence from their head-quarters; but, before regular observations of temperature begin in the forests, it will be useful if the two cages with thermometers are set up temporarily at Mr. Lowrie's head-quarters. One cage should be on level grass-land without trees, and in a thatched shed of the standard pattern described in the *Vade mecum*; the other cage should be in a similar shed under a cluster of trees; but, if this be difficult, it may be under a single tree. Comparative observations should then be commenced at once. These preliminary observations will be very valuable when afterwards compared with observations in the forest; they will show what effect is due to the mere shelter which trees afford, in comparison with the effect which is due to shelter combined with the change in the humidity of the air which the presence of a regular forest causes. Observations regarding dew cannot be undertaken at present. The following instruments should be indented for from the Meteorological Reporter to the Government of India:—

Cages for thermometers (standard pattern) ...	2
Dry bulb thermometers (ordinary)	2
Wet bulb thermometers (ordinary)	2
Self-registering maximum thermometers	2
Self-registering minimum thermometers, dry bulb	2
Self-registering minimum thermometers, wet bulb	2
Small phials for holding the water which supplies the wet bulbs	4
Indian Meteorologist's *Vade mecum* and Tables, volumes	3
Books, Form B, for daily readings	2
Sheets, Form A, for monthly records of observations	30

A tin funnel will be required with which to fill the water phials. Pure rain water or distilled water must always be used; rain water should be collected on the occurrence of the first fall of rain, but in the meantime a supply of distilled water can be sent from Dehra.

(*iii.*) *Effect on the supply of water in wells* (see Mr. Brandis' paragraphs 58 to 65).—A number of existing wells and of sites for new wells have already been selected, and Mr. Lowrie should mark all these accurately on the map; he should also, as soon as possible, select other sites, both in Ajmere and Merwara, and mark them on the map: and, when doing this, he should pay particular attention to the localities suggested by Mr. Brandis and Mr. Moir. Wells that are not used for irrigation are of

course far perferable to those which are so used; But I. am informed that wells are not much used for irrigation after the 1st April, and this makes the selection very much easier than it would otherwise have been. It is, obviously quite impossible for Mr. Lowrie himself to conduct the observations in all the localities suggested by Mr. Brandis, as they are separated by such long distances; this could not have been Mr. Brandis' intention, nor do I think it at all necessary that he should make all the measurements himself. He should himself undertake them in the case of a few conveniently situated wells, and he must instruct the Ranger and the most intelligent of the Foresters to make them in other wells. Eventually, I think, it will be possible to entrust this work to many of the Native establishment, Mr. Lowrie of course visiting all the wells from time to time to check the records. Mr. Lowrie should at once arrange to commence the measurements in a few existing wells (including those in the new garden), in order that he may determine the best system for adoption. Suggestions regarding this subject will be found in Mr. Brandis' paragraph 61 and in the Inspection Reports of 1880-81 and 1881-82. I do not recommend that any new wells should be sunk until Dr. Warth has seen and approved of the proposed sites. If sanction be accorded, Dr. Warth can visit Ajmere in November next and advise Mr. Lowrie regarding all the sites selected for these and for the other experiments.

(*iv.*) *Effect on the discharge of streams and springs* (see Mr. Brandis' paragraph 66).—Mr. Lowrie should visit all the localities suggested by Mr. Brandis, and mark the sites on the map; he should also mark any other sites which appear to him to be suitable, and he should prepare a few streams and springs at once for measurement, taking the discharges himself as frequently as possible. The important point is to note the time when a serious diminution in the flow of water occurs, and when it ceases altogether. These observations require great care, and they cannot at present be entrusted to subordinates; but Mr. Lowrie should teach some of the Foresters to make rough periodical measurements, which would keep him informed of the condition of the water supply, and warn him when his presence is required. Hereafter it may be possible to arrange for a more complete and regular system of record; but until measurements can be made regularly on fixed dates, they should be made on the same dates as in previous years, with such additional measurements as may be necessary and possible.

(*v.*) *Effect on tanks* (see Mr. Brandis' paragraphs 67 to 75).—The first thing to do is to select and mark on the map some of the most suitable tanks regarding which records are now kept by the Irrigation Department, and to obtain from that Department an abstract shewing the results hitherto obtained during each year. The records which, I am informed, have been kept regarding wells which existed on some of the sites before the tanks were constructed should also be obtained, and the results of the observations of future years should be obtained yearly. The Irrigation Department has an equal interest with the Forest Department in securing a satisfactory record

of the results of forest conservancy, and experience will show whether any modification of the present system of observations is required. Mr. Lowrie should select some tanks, the water supply of which is not recorded by the Irrigation Department, and should eventually arrange to make observations regarding them; those tanks of which the catchment areas are protected to the greatest extent will of course be the most suitable.

I shall be glad if Mr. Lowrie is permitted to send me the maps with the sites for the various experiments and observations marked on them, and also a memorandum showing to what extent he is able to carry out my present suggestions. Payment will not, I believe, be demanded for the instruments to be obtained from the Meteorological Department; and Rs. 2,000 will suffice for all the experiments, including the wells that will be sunk next cold weather.

6. *Detailed description of reserves.*—Mr. Lowrie should by degrees prepare a detailed description of each of the forests or blocks; with special reference to the present condition and rate of growth of the existing stock, and to the condition of the natural reproduction. When preparing these descriptions, he should study what has been written regarding each forest by Mr. Brandis and Mr. Moir.

7. *Taking up of new reserves.*—From what is said in the orders of the Government of India on the Annual Progress Reports and in other places, it is evident that it has been expected that very large areas would be brought under protection at the coming settlement. In the Government of India's review of the Annual Report for 1881-82 it is said that the forest area should be increased until it is capable of yielding all the forest produce and the grazing required by the people, not only in ordinary years, but also in times of scarcity. In the Chief Commissioner's review of the same Report it is said that of the 219,024 acres of waste and fallow land in Ajmere, probably 55,651 acres, which consist of dry arid hills, tanks, streams, &c., may be excluded from the area actually available for pasturage, and it is suggested that the remaining area should be placed under proper management. Manifestly this proposal involves the protection of the whole 219,024 acres, of which only 12,567 acres are at present reserved. In the orders on the Annual Report for 1878-79 it is said that the total barren and fallow area is 588,647 acres, out of which 64,428 acres were then reserved as forests. These figures refer only to the Kalsa land; the Istimrar land canot be touched. The details of the 588,647 acres, taken from the last Settlement Report, are as follows:—

See the following documents:—
Orders on Annual Report, 1878-79, para. 5.
Home Department letter No. 746 F. of 22nd August 1881.
Orders on Annual Report for 1880-81, para. 2.
Orders on Annual Report for 1881-82, para. 2.

	Barren.	Old fallow.	New fallow.	Total.
Ajmere ...	111,303	89,703	18,018	219,024
Merwara ...	337,446	27,168	5,009	369,623
		Total ...		588,647

Of this area only 77,875 acres are at present reserved, and it would seem to be the intention of Government that the greater part of the remainder should now be reserved. It appears, however, that the Regulation provides for the reservation of "tracts of waste land or hilly land," and that fallow land cannot be taken up under it; so that there remain only 370,874 acres out of which new reserves can be formed, and the country is so much cut up with cultivation that, in the opinion of the Commissioner, only a small portion of this area is practically available for reservation. In Merwara, where the area of

waste land is much larger than it is in Ajmere, all valleys where facilities for cultivation present themselves have been broken up, and, as the country has become more settled, the old village sites on hill tops have been deserted, the cultivators having built new hamlets close to their fields in the valleys. This causes the waste lands to be very much intersected; and it is considered absolutely necessary to leave a certain amount of waste land around each hamlet, in which the agricultural cattle belonging to it can be conveniently pastured, though other cattle may be driven to graze at some distance from the houses; so that the localities in which continuous tracts of waste land are available for reservation are very few, and it will not be desirable to take up a number of small and scattered patches as reserved forests. Mr. Saunders does not at present think that it will be possible to make up the total area of the reserves to more than 100,000 acres, or 22 per cent. of the total area of barren waste land; in other words, he considers that it will not be possible at the coming settlement to add more than about 22,000 acres to the existing reserves.

8. *Village Forests.*—Mr. Saunders, however, thinks that if a special Regulation could be enacted so as to give the needful powers, an additional area might be taken up as "Village Forest." This is, I think, a very good suggestion. If it were adopted, the Reserved Forests would be maintained principally with a view to clothing the hill sides with forest growth, and to the supply of timber; while they would always be available as grass-preserves, from which grass could be cut and carried away, and parts of them at any rate would be available for the admission of cattle in years of exceptional difficulty. The Village Forests would be maintained principally as grazing grounds, but they would also supply a certain amount of wood for the use of the village community; the trees on them must be protected, as they are required in order to afford shade to the cattle. There is no doubt that it is very desirable to take some measures for the protection of a larger area than it will apparently be possible to take up as Reserved Forests. The cutting and lopping of trees for charcoal and buffalo fodder is carried on largely in the present waste land tracts, and, as increased areas are brought under conservancy, the value of the wood becomes enhanced, and the temptation to cut it down is increased; so that in the course of time these areas will become denuded of the scanty crop of trees they now bear. I am told that in Merwara the number of cattle has been doubled since the present Reserved Forests were taken up—*i. e.*, during a period of ten years—and it is probable that a somewhat similar increase will be found in Ajmere. The grazing question, which was a difficult one in 1874, is therefore likely to become more difficult still, for, as the cattle increase and the hills become more denuded of trees, the quality of the pasture deteriorates. To take up a considerable area as Village Forest and place it under control would undoubtedly impose additional restrictions on the people at the present time, but to do this would ultimately prove to be a great benefit to the districts, for, under a proper system of management, the quality of the pasture may be expected to show a marked improvement, and as soon as this result is achieved a smaller area will be required than is now necessary per head of cattle, and the circumstances of the people will then become easier in this respect. The Village Forests would be managed by the villagers themselves under the supervision of the Forest Department; the demarcation might be effected as a part of the settlement, as it would not be necessary to enclose the tracts with a continuous fence; some guards or watchmen would be required, and these would be appointed and paid by the village community, who would be entitled to any surplus revenue that these forests may at any time produce. I do not propose that any current account of receipts and expenditure

should be kept by Government regarding them, and the only rules that it would be necessary to enforce would be made to regulate the following acts:—

(*a*.) The lopping of trees. Certain species of trees, and all trees below a certain size, must be protected.

(*b*.) The felling of trees. The maximum number to be felled annually must be fixed, and no tree must be felled without the permission of the Lumbardar.

(*c*.) The lopping or felling of any trees for sale must not be permitted without the express permission of the Forest Officer, and a proportion of the ground must be freed from all lopping and felling.

(*d*.) The grazing of cattle. It will be necessary either to divide each Village Forest into three nearly equal portions, with reference to the present quality of the pasture, and to close each portion in succession for one year, grass being allowed to be cut in the closed portion during November and December; or to close the whole area from July to October inclusive, allowing grass to be cut and removed during November and December, and allowing the entry of cattle during the remaining 6 months of the year. The first named system would probably be the best, while I believe that the second would be the most readily accepted by the people, who, I am informed by Mr. Lowrie, have already begun to treat portions of their waste lands in this manner.

(*e*.) The breaking up of land for cultivation. This should only be done on fallow land.

It will be necessary to include some fallow land in the Village Forests, and this must be provided for in any new Regulation which is made. I understand from the Commissioner that a proposal has previously been made to constitute Village Forests, but that it was not sanctioned by Government. In case, however, the present suggestions are favourably received, I think that Mr. Whiteway should be asked to prepare, as his settlement proceeds, lists of all waste lands which, in his opinion, are available for the formation of Reserved Forests, and also of all waste and fallow lands which might be constituted as Village Forests. The areas should in all cases be given, and it can then be decided which of them it will be worthwhile to take up. In the case of Village Forests, although a very intricate boundary would be objectionable, there seems no reason why land should be excluded merely because it is near to hamlets or cultivation.

D. N. M.—Home Department Press—No. 365—10-1-84—260.

PROGRESS REPORT

OF

THE FOREST ADMINISTRATION

IN

AJMERE—MERWARA

FOR

1883-84.

BY

A. E. LOWRIE, Esq.,
OFFICIATING ASSISTANT CONSERVATOR OF FORESTS.

WITH REMARKS BY THE COMMISSIONER, A REVIEW BY THE CHIEF COMMISSIONER,

AND

ORDERS BY THE GOVERNMENT OF INDIA.

1884.

No. 905 F., dated Calcutta, the 6th December 1884.

From—A. MACKENZIE, Esq., C.S., Secretary to the Government of India, Home Department.

To—The Chief Commissioner of Ajmere.

I AM directed to acknowledge the receipt of your Secretary's letter No. 2247S., of the 17th September last, submitting the Report of Forest Administration in Ajmere-Merwara for 1883-84, with reviews by the Commissioner of Ajmere and by yourself.

Area.

2. The area of the Reserves has, during the year under review, been increased from 122 to 139 square miles. Only very limited areas for further extensions are now said to be available, so that the total area is not likely to rise beyond 150 square miles, or about 5 per cent. of the area of the two districts. It is evident that such a limited area of forest is not sufficient for the requirements of the people, and it is hoped that, if the area of State Reserves cannot be further increased, Village Reserves will be constituted at an early date and on a comprehensive scale.

Protection of the Forests.

3. The protection of the forests during the year has been satisfactory. The breaches of forest rules numbered 67 as against 62 in 1882-83, while the number of cattle impounded was 3,643 as compared with 3,736 in the previous year, of which more than one-third were trespassing on the new areas lately included in reserves. The whole area, 139 square miles, was successfully protected against fire, at an expenditure of about Rs. 4 per square mile, or 1⅓ pies per acre.

Grazing.

4. The Commissioner records his conviction that the natural reproduction of grass in the reserved tracts increases annually owing to the grass being allowed to seed before it is cut, instead of being grazed off, as in the unreserved plots, as soon as the shoots appear above the ground. During the last ten years cows and bullocks have increased by 146 per cent., buffaloes by 112 per cent., beasts of burden by 111 per cent., and sheep and goats by 21 per cent.

Although you acknowledge these facts, you show that the increase has been more rapid in villages which are not affected by the reserves, and the Government of India would be glad to see this subject further investigated.

Financial Results.

5. The financial results were as follow:—

	Rs.
Receipts	8,198
Charges	14,574
Deficit	6,376

The Receipts have, as compared with those of 1882-83, risen by Rs. 1,072, and the Expenditure by Rs. 3,290; hence the Deficit is somewhat larger, which is due to increased expenditure on account of the pay of the Assistant Conservator of Forests lately posted to Ajmere. On the whole, the Receipts are steadily rising.

6. It is satisfactory to notice that the experiments regarding the effects of protection on temperature, water-supply, &c., have at last been started.

Experiments.

7. On the whole, the results of the year's working are satisfactory, and His Excellency the Governor General in Council notices that Mr. Lowrie, the Officiating Assistant Conservator of Forests, has given satisfaction.

No. 906 F.

COPY of the above, with a copy of the Report, forwarded to the Government of the North-Western Provinces and Oudh, for communication to the Conservator of Forests of the School Circle.

No. 907 F.

COPY of the above, with a copy of the Report, forwarded to the Foreign* Department for information.

* Original papers returned

No. 908 F.

COPY of the above, with a copy of the Report, forwarded to the Revenue and Agricultural Department for information.

A. R. M.—Home Department Press—No. 21—10-12-84—255.

REPORT OF FOREST ADMINISTRATION IN AJMERE-MERWARA FOR 1883-84.

No. 22478., dated the 17th September 1884.

From—The Secretary to the Chief Commissioner of Ajmere,

To—The Secretary to the Government of India, Home Department.

I AM directed by the Chief Commissioner to submit the Annual Report of Forest Administration for 1883-84, together with his review thereof.

Extract from the Proceedings of the Chief Commissioner of Ajmere in the Public Works Department,—No. 22468., dated the 17th September 1884.

READ:—

The Commissioner's Progress Report of Forest Administration in Ajmere-Merwara for the year 1883-84.

RESOLUTION.—The area has increased from 122 square miles at the beginning of the year to 140 square miles at the close thereof.

Area of the Reserves
[Commissioner's paragraph 3.]

2. The boundaries of the tracts and areas added during the year have been demarcated with dry stone pillars placed along the lines fixed without a regular survey.

Boundaries of the Reserves
[Assistant Conservator's paragraph 4.]

3. Survey plans of the Dewair and Danta tracts were furnished during the year to the Superintendent of Forest Surveys, and it is proposed to use the Survey party now engaged in the district to prepare maps of forest tracts on a scale of 4″ to a mile, in such details as would assist in the preparation of working plans, which at present exist for no portion of the total area.

Assistant Conservator's paragraph 9

4. The boundaries are stated to be in good order and are not under dispute, except in two cases which the Commissioner hopes will be settled before the survey operations extend to those parts. The Assistant Conservator, in paragraph 7 of his Report, gives preference to stone walling over *Euphorbia* hedge as a fencing. Where *Euphorbia* will not grow naturally, and good stone is at hand in abundance at a cheap rate, stone walling would, no doubt, be the better of the two.

[Commissioner's paragraph 4.]

5. The Commissioner mentions, in paragraph 3 of his review, the prospect of a further area of 4,000 to 5,000 acres being added to the reserves, and, considering the extensions recently accomplished and the areas which will be absorbed by the proposed village reserves, further additions are scarcely to be looked for.

6. Notwithstanding that a large area came under reserve for the first time during the year, and that the rainfall was under the average, breaches of Forest rules numbered only 67 against 61 of the year 1882-83, the number of persons concerned, 133 as against 111, and the head of cattle impounded, 3,643 as against 3,736. More than a third of the head of cattle impounded are accounted for as taken from the recently acquired tracts: on the older tracts, therefore, the improvement is evident.

Protection.
[Commissioner's paragraphs 5 and 6.]

7. Excepting 5½ acres the entire area was protected from fire at the small cost of Rs. 553—a satisfactory evidence of the efficiency of the fire lines and other measures adopted. The fire lines will, however, need further extension, as suggested by the Assistant Conservator in paragraph 17 of his Report.

[Commissioner's paragraph 7.]

8. Paragraphs 8 to 12 of the Commissioner's review contain interesting statistics intended to show that the Forest reserves have not injuriously affected the natural increase of cattle.

Grazing allowed in Forest tracts and its effect on the condition thereof.

9. The general increase over the entire district may be accepted as satisfactory.

There is, however, a marked difference between that in the Ajmere khalsa and that in the Merwara tracts, thus :—

Tehsil.	Cattle.		Buffaloes.		Beasts of burden.		Sheep and Goats.		Forest Reserves.	
	Gross increase.	Percentage.	Gross increase.	Percentage.	Gross increase.	Percentage.	Gross increase.	Percentage.	Total square miles.	Percentage of gross area.
Ajmere ...	54,263	137	11,751	172	2,111	114	29,528	50	24	4·16
Beawar ...	30,218	161	4,146	·99	794	91	6,299	12	116	17·00
Todgarh ...	26,512	150	3,938	59	899	127	—3,900	—9		
Total	1,10,993	146	19,835	112	3,804	111	31,927	21		

10. The Settlement Officer states the increase in villages, areas of which are affected by the Forest reserves, to be—

	Class.	Gross increase.	Actual per cent.	Settlement Officer's figures per cent.
Entire District.	Cattle	18,838	124·1	130
	Buffaloes	3,457	78·8	79
	Beasts of burden	717	63·3	63
	Sheep and goats	793	2·5	2

Under the head of Cattle the Revenue officer appears to have made a slight error.

From the above tables can now be deduced the actual increase on areas not affected by Forest reserves, and these appear as below :—

Class.	Gross increase.	Actual percentage.	Settlement Officer's average for whole area percentage.	Percentage on reserves, see last table.
Cattle ...	92,155	152·4	146	124·1
Buffaloes ...	16,378	123·0	142	78·8
Beasts of burden ...	3,087	136·0	131	63·3
Sheep and goats ...	31,134	25·9	21	2·5

Thus, although only 11·2 per cent. of the total area of the three tehsils has been reserved, the natural increase is less on the reserved tracts by the difference between columns 3 & 5 in the last table, and less on the total area by the difference between columns 3 and 4; in other words, the entire district increase should have been the high figures shown in column 3 but for the reserve.

11. The figures given by Mr. La Touche, in the Settlement Report of 1874-75, seem to show that the natural increase should be greater in Merwara, Todgarh Tehsil, than Mr. Whiteway can now show.

Thus:—

Tehsil.	Increase in head of Cattle over previous settlement.	Per cent.
Ajmere Tehsil	18,863	21
Beawar Tehsil	38,481	93
Todgarh Tehsil	36,303	111

It may be inferred on the whole that, so far as the experiment has gone, the influence of reserves in retarding reproduction is rather greater than the district authorities are quite aware of. This must be carefully watched.

12. The Assistant Conservator, in paragraph 20 of his Report, thinks that the manner in which grazing has been allowed in the three Merwara tracts has "to a certain extent affected the reproduction." He promises in future to regulate the grazing more evenly over the areas of the tracts.

13. In paragraph 21 of his Report the Assistant Conservator quotes the price of grass at Ajmere and Nasirabad to be annas 4 to 8 per bundle, and points out how these high prices induce the villagers to sell off what should be stacked for future use. The Commissioner notes that these sales bring the villagers a large income.

[Commissioner's paragraph 8.]

14. With reference to the Assistant Conservator's complaint that too much of the grass is sold, the proper remedy would seem to be the encouragement, by practical example and experiment, of the use of silos in which to store ensilage at site, and which would then be available either for sale or for local consumption, as circumstances might dictate.

15. The natural reproduction of Forest growth, as described in paragraph 22 of the Assistant Conservator's Report, appears to be encouraging. Mr. Saunders bears personal testimony to the improvement of the Merwara tracts.

Reproduction of Forests.

[Commissioner's paragraph 13.]

16. Efforts to secure improvement by artificial reproduction were continued during the year, but the rains were not favourable. Coppicing results were, however, encouraging.

[Commissioner's paragraph 13.]

17. Operations at the nurseries at Ajmere and Beawar were not satisfactory compared with the expenditure incurred. Paragraph 15 of the Commissioner's review does not give a very hopeful prospect of the working of these nurseries in the absence of a supply of tank water, but it is proposed to utilize them to a further extent for distribution of plants for arboriculture.

[Commissioner's paragraph 15.]

18. No new plantations were made during the year.

Experiments.
Commissioner's paragraph 17.]

19. The proposed experiments were not commenced during the year, but they are now in progress.

Financial Results.
[Commissioner's paragraphs 18 to 22.]

20. The financial results of the year, compared with those of 1882-83, were as follow:—

Year.	Receipts.	Charges.	Deficit.
	Rs.	Rs.	Rs.
1882-83	7,120	11,281	4,158
1883-84	8,198	14,574	6,376
Increase in 1883-84	1,072	3,290	2,218

21. The deficit was Rs. 6,376 as against Rs. 4,158 for the year 1882-83, owing mainly to higher establishment charges. The working is said to promise better for the future. The cuttings from the Merwara tracts intended to supply fuel to the Railway department did not prove profitable to the extent anticipated, but much is looked for from the experience gained in the experiment.

22. The Chief Commissioner concurs in the credit given by the Commissioner to Mr. Lowrie for the results secured, and he fully recognizes the value of Mr. Saunders' personal interest in the administration of this department.

ORDER—Ordered that a copy of this Resolution, together with the Report in original, be submitted to the Government of India in the Home Department, under cover of a separate letter.

Review of Progress Report of Forest Administration in Ajmere-Merwara for the year 1883-84, by L. S. Saunders, Esq., C.S., Commissioner and Conservator of Forests, dated the 13th August 1884.

First Forest Report submitted by Mr. Lowrie, Assistant Conservator of Forests.

1. The Progress Report of Forest Administration is furnished this year for the first time by the Assistant Conservator of Forests, who was placed in executive charge of the Ajmere and Merwara forests from the 1st April 1883, on the understanding mentioned in paragraph 48 of last year's Report.

No special remarks by Assistant Commissioners of Ajmere and Merwara.

2. Both the two Assistant Commissioners of Ajmere and Merwara, Mr. Crawford, C.S., and Lieutenant Cornish, joined their appointments after the camping season was over, and have accordingly no personal knowledge of the subject locally; they have therefore not recorded any special remarks.

Area under protection

3. The area now under conservation has been increased during the year from 77,875 acres, or 122 square miles, to 89,190 acres, or 140 square miles. These figures are subject to correction when the regular survey of these tracts has been undertaken. It is probable that another 4,000 to 5,000 acres may be added to this area during the current year, but there is but little chance of any further tracts being acquired as State Forest Reserves hereafter. The boundaries are in good order. The disputed boundary mentioned in paragraph 14 of last year's Report, and another one on the Marwar border which has since been in question, will be settled, it is hoped, this year, before the work of the professional survey reaches that part of the country.

Increase required to Forest establishment.

4. Final orders have not yet been passed on the increase to the Forest establishment submitted with this office No. 68F., dated the 26th July 1883. I trust that orders may soon be passed, as the work is increasing, and the establishment

requires to be put on a more satisfactory footing, to ensure better men being induced to join the subordinate posts in the Forest Department.

Magisterial work in Forest cases.

5. The number of cases for trial by the Magistrates has decreased from 61 to 31 in this year, as the Chief Commissioner, in his Secretary's letter No. 1780S., dated the 24th July 1883, agreed to give the Assistant Conservator of Forests power to compound cases of damage to Forest produce, and the Assistant Conservator of Forests was himself able to dispose of 36 cases, involving 61 persons, in this way. Out of 31 magisterial cases, convictions were obtained in 28, affecting 60 persons, and Rs. 187 were realized as magisterial fines, while departmentally Rs. 41 were received as compensation for damage caused.

Cattle impounded.

6. The number of impounded cattle must have decreased in the tracts which have been under our control for some years largely, for the total number of impounded cattle is very nearly stationary, and considerably more than one-third of these seizures were cattle found trespassing in the tracts which have been newly taken over this year. The income received from this source amounted to a little more than Rs. 300.

Fire protection.

7. Fire protection has been very fairly complete, only 5½ acres having been burnt. This protection has been secured at the small cost of Rs. 553.

Grazing and results thereof.

8. Grazing was allowed in most of the Merwara tracts from the 1st March to the end of June 1883, and owing to the failure of the grass crop in 1883, the Forest Reserves were again thrown open earlier than usual, *viz.*, from the 15th February 1884, and grazing was still continuing after the close of the official year now under report. Upwards of 5,000 head of cattle were admitted to graze, while Rs. 850 were realized on this account. In addition to the assistance thus given to the cattle of the district, 3,822 permits were also given in Ajmere for cutting grass. Most of the grass cut in the tracts near Ajmere and Nasirabad is sold by the people in the city and cantonments, and brings them a very large income; grass is cut all over Merwara freely without permits. The whole revenue derived from the sale of grass and grazing is reported to have brought in as much as Rs. 4,563 in the year; thus more than half the whole Forest income is derived from this source.

Natural reproduction of grass and formation of village reserves.

9. The natural reproduction of grass in the tracts we have reserved for some years appears to me to increase annually, and I have no doubt that the fact of the grass being allowed to seed before being cut or removed must have a beneficial effect on the next crop. In those tracts outside the reserves where the grass is usually eaten down by the cattle as soon almost as it springs up, I have noticed in such places as have not from any cause been grazed down at once, its reproduction is not nearly so luxuriant, and the grass does not reach the same height as in those spots which we have protected for a few years; and I have no doubt that the weight of grass thus lost by careless and indiscriminate grazing over the whole area of a village must be very large. It is mainly this consideration which has induced us to propose the formation of Village Reserves (as mentioned in paragraph 49 of last year's Progress Report, and in paragraph 8 of Major Bailey's Note appended thereto).

Proposed Ajmere Regulation for formation of Village Reserves.

10. During the year a Regulation to effect this purpose has been drafted for approval and submitted with this office No. 530G., dated the 18th April 1884, and the general principles have now been officially accepted in Foreign Secretary's letter No. 2451., dated the 19th July 1884, received while I am writing this review; but as this Regulation can only become law during the current year, mention of it will be more properly deferred till the current year's Report is submitted.

11. There has been an idea, I am aware, in some quarters, that the people have been hardly dealt with, by the acquisition of these tracts as Forest Reserves. I have always felt sure such views were erroneous, and I am therefore happy

to be able to record, at the earliest moment that the Settlement Officer has found, from the statistics he has prepared for every village, that the cattle (that is, cows, bullocks, &c.,) have increased in the whole district during the settlement by 146 per cent.; buffaloes by 112 per cent.; beasts of burden, that is, camels, donkeys, pack horses, ponies, &c, by 111 per cent.; but sheep and goats only by 21 per cent. I give *in extenso* his remarks as to the effect of the Forest Reserves in paragraph 42 of his report on the summary settlement of the district :—

Statistics of increase of cattle in past decade.

"To show the effect which the taking up of Government jungles from the waste of certain khalsa villages has had on the head of cattle in those villages, I have divided the existing jungles into three classes :—

"(1) Those taken up in 1875, comprising the Nagpahar, Chang, Sheopura, Bilawas, and Todgarh tracts.

"(2) Those taken up in 1876, comprising the Srinagar, Mohwa Bir, Rajaosi, Ans Pahar, and Barwar tracts.

"(3) Those taken up in 1880, namely, Dewair.

"The following statement shows in abstract the head of cattle now as compared to last settlement (1874).

	Cattle.		Buffaloes.		Beasts of burden.		Sheep and goats.	
	1874. Settlement.	1884. Now.	1874. Settlement.	1884. Now.	1874. Settlement.	1884. Now.	1874. Settlement.	1884. Now.
			(1) Those taken in 1875—					
	7,574	16,472	2,422	4,128	790	1,193	15,839	14,876
			(2) Those taken in 1876—					
	5,049	12,315	858	2,179	242	496	10,146	12,943
			(3) Those taken in 1880—					
	2,546	5,220	1,101	1,531	101	161	5,789	4,748
Total	15,169	34,007	4,381	7,838	1,133	1,850	31,774	32,567

"These results are very striking in showing that the taking up of the jungles has not resulted in checking the growth of the head of cattle. In these villages cattle have increased 130 per cent., buffaloes 79 per cent., beasts of burden 63 per cent., and sheep and goats 2 per cent."

12. The general conclusion Mr. Whiteway arrives at is that "in spite of the waste land being taken up, the increase of animals in jungle villages has very nearly kept pace with that in the rest of the district." And he adds: "The slight retardation is not a matter of regret, as a large part of the animals are useless, except as manure producers." Considering that just before last settlement one of the severest famines on record had taken place, and that during the period for which we have collected the statistics we have had at least one year (1877) of great fodder scarcity, and that in that year we were able to keep the cattle alive by allowing them to graze in the Forest Reserves, I think no better refutation of the hardships inflicted on the people (by Government regulating the use of these grass reserves) than the figures given above could be produced.

Hardships to people owing to acquisition of these tracts and regulation of grazing.

13. The natural reproduction of trees and seed-bearing trees is also favourably reported upon, and the Assistant Conservator considers that the condition of the tracts is full of promise. I visited a large portion of the Merwara tracts myself during the cold weather, and saw many portions which were quite new to me, and over which probably no European had before passed, and I can fully confirm Mr. Lowrie's opinion in this respect; the great and almost unprecedented break in the rains last year, which commenced from the 18th July and only ended on the 30th August, was a severe trial to all young seedlings, but it is surprising how many of them weathered this severe and rough trial. Owing to the lengthened drought, the artificial reproduction was, I regret to say, almost a total failure last year.

Reproduction of trees.

14. The coppicing experiments were continued during the year, and appear to be most encouraging and likely to prove exceedingly successful, and this will probably be found to be the most profitable way of utilizing our scrub jungle.

Coppicing.

Nurseries.

15. The nurseries at Beawar and Ajmere have not done well owing to the brackishness of the water, and it seems unlikely that we shall be able to furnish them with tank water, as we had hoped, but upwards of 7,000 young trees were distributed gratis for use in and around the station, besides 2,500, which were sold for use elsewhere. It is, I think, a very important part of our duty to raise these young trees and serve them out gratis to the public at convenient spots, as every tree grown is a distinct gain to the district, and saves a drain on our reserves. I have under consideration some proposals for giving further inducements for tree-planting in this arid district, as I believe we are behind other provinces in respect of encouraging arboriculture generally. We have not yet been able to dispose of the old nursery at Ajmere.

Forest buildings and communications.

16. There is not much of importance to report about Forest buildings. They were kept in fair order; but as to communications, some 23 miles of inspection roads were opened out during the year, through some of the Merwara tracts, after they had been aligned for us by Mr. Bhagat Singh, Assistant Engineer, and they have proved very useful, and have enabled us to visit parts of these tracts which had scarcely ever been visited before.

Experiments proposed by Dr. Brandis.

17. No progress was made during the year in carrying out the experiments for which Mr. Lowrie was specially deputed here. There was no money available, and an increase to the budget for this purpose, when applied for, was refused. Major Bailey informed us that Dr. Warth would visit Ajmere to select spots for these experiments, and Mr. Lowrie was kept in Ajmere waiting for him for some time during the cold weather, but he never arrived; we have since selected spots, and during the current year some of the wells have been sunk, and experiments have commenced.

Working of our Reserves.

18. An attempt has been made to work the jungles in Merwara to supply the Railway workshops at Ajmere with their requirements; they indented for 5,000 cubic feet of firewood and 5 tons of charcoal, which have been supplied, but I fear much profit has not been made on this transaction. Further experience is required to ascertain the cheapest way to meet the demand of the public, and it is probable that it will prove cheaper to sell the standing wood to contractors, as departmental cutting and carrying is liable to lead to much cheating, and is not, as a rule, successful.

Experimental working in Ajmere Reserves.

19. In Ajmere two small patches of 10 acres each were sold standing to be cut, and they realized Rs. 197, or nearly Rs. 10 per acre, but the land was not entirely cleared, as it was agreed that a certain number of standards should be left for seed-bearing purposes, and there was some difficulty experienced in getting the contractors to cut the scrub close enough to the ground—an essential to the success of coppicing experiments—as otherwise the shoots will not spring again. The right to collect dry wood and dead trees was sold in Ajmere in most of the tracts by auction, and in Merwara at a rate per head-load or donkey-load, and fetched altogether upwards of Rs. 2,000.

Free grants of such forest produce as were required by the villagers were liberally given.

Financial Results.

20. The general financial success of Forest administration for the year is, on the whole, satisfactory. The appointment of Mr. Lowrie, who gives the whole of his time to supervising this work, has been rewarded by a large increase to the income, which is double that of 1881-82, and is Rs 1,000 more than that of 1882-83. A large part of this increase is due, no doubt, to the failure of last year's grass crop; but I have no doubt that gradually Mr. Lowrie will be able to increase the income considerably. This cannot of course be done without an increase in the expenditure. Though this year the deficit is larger than it was in 1882-83, I have myself no doubt that it will not be long, if Mr. Lowrie be left here for a few years to come, before the income and expenditure will balance themselves, if not give an excess over expenditure.

21. A very interesting collection of the woods of this country was carefully prepared, labelled, and despatched by Mr. Lowrie to the Edinburgh Exhibition of Forestry.

Edinburgh Forestry Exhibition.

22. In conclusion, I desire to bring to notice the excellent work that has been done by Mr. Lowrie, and I hope that some arrangement may be made to give him permanent promotion to the grade in which he is now officiating. He has shown himself a useful and active officer of superior intelligence and well deserving of consideration; nor can I conclude without asking that something may also be done to improve Forest Ranger Sahib Roy's position. He has now been here nearly four years without receiving any promotion or increase of pay, whilst his work has been most highly spoken of by all the officers under whom he has served. I have every reason to believe that he is above the average of officers in his position in honesty, industry, and general efficiency, and I trust some means may be found of recognizing his services.

Notice of officers.

No. 115, dated the 26th June 1884.

From—A. E. Lowrie, Esq., Assistant Conservator of Forests, Ajmere-Merwara Division,

To—L. S. Saunders, Esq., C.S., Commissioner and Conservator of Forests, Ajmere-Merwara (through the Asst. Commissioners of Ajmere and Merwara).

I have the honour to submit the Annual Progress Report of Forest Administration in the Ajmere and Merwara Districts for the year 1883-84.

2. Out of the Forms laid down in paragraph 255 of the Forest Department Code Forms Nos. 49, 50, 51, 52, 57, 59, 61, 62, and 63 are attached to the Report. Forms Nos. 53 to 56 will be furnished to you direct by the Assistant Comptroller General (Forests). As no selection fellings took place during the year, Form No. 58 is blank. Forms Nos. 60, 64, and 65 are also blank, as there are no sale depôts in the Division.

3. I enclose herewith two statements showing the income and expenditure of the Division under each tract.

Progress Report of Forest Administration in Ajmere-Merwara for the year 1883-84, by A. E. Lowrie, Esq., Assistant Conservator of Forests.

INTRODUCTION.

The Ajmere and Merwara sub-Divisions were formed into one Division, of which I held charge during the year. The head-quarters of the Division being fixed at Ajmere, Forest Ranger Sahib Roy held charge of the Merwara sub-Division. The change took place in accordance with Major Bailey's Note dated the 9th March 1883.

2. As suggested by Major Bailey, certain subjects of correspondence with the Commissioner were carried on through the District officers, so as to maintain their co-operation in Forest matters. The plan has been found to work very well.

3. In August, December, and March last I visited the Merwara reserves in order to obtain some idea of the forest in its different phases, which was very interesting.

CHAPTER I.

Area and Boundaries.

4. During the year the Rajgarh tract, comprising an area of 2,885 acres, was added to the Ajmere sub-Division, while four additional tracts, Banjari Mandlan, Amner Kukra, Siliberi, and Sheopura extension, were taken up in Merwara, in all an area of 8,420 acres. This now gives a total area of 89,180 acres at the close of the year, as shown in Form No. 49. The new figures are, however, sub-

ject to correction, as no regular survey of the tracts has been made; they have, however, been demarcated with dry stone pillars placed along the boundary.

5. We have now reached the limit to which the Ajmere-Merwara forests can be extended, and, with the exception of about 4,000 acres, 2,300 in Ajmere (Makerwali tract) and 1,700 in Merwara (Bakula tract between Bheo and Kotkaran), there are no other tracts which can possibly be taken up without interfering with outlying-hamlets and numerous patches of cultivation. Efforts are, however, now being made during the present settlement to establish Village Reserves, which, in my opinion, will be the means of incalculable good to the district; for one cannot help noticing that, while of late years the cattle have largely increased, the grazing grounds, both in Ajmere and Merwara, have undoubtedly deteriorated by being over-grazed. Another good result looked for from these Village Reserves will be the great help afforded to the Government Reserves, in relieving them of any undue strain which the greater number of blocks are by no means able to bear in their present state of progress.

6. The boundary pillars of the Ajmere tracts were repaired during the year, and the numbers repainted where necessary. Those of the Merwara tracts are in fair order.

7. The boundary fences of the Ajmere tracts were repaired during the year, in all 41,259 running feet of *Euphorbia* fencing, of which 4,161 running feet were new and 1,512 running feet stone walling. The total expenditure on this work was Rs. 510-5-8.

The very large figures are due to nearly the whole of the *Euphorbia* planted last year, as also to a large quantity of the *Euphorbia* planted by Colonel Dixon some 25 years ago along the Lohagal road having died. It would be advisable in future to restrict the *Euphorbia* fencing, and to gradually fill up all blanks where *Euphorbia* will not grow with stone walling. The fences in the Merwara sub-Division are in fair order.

8. Nine thousand one hundred and twelve running feet of stone walling were constructed along the central boundary of the Srinagar tract. This line was recommended by the Inspector General of Forests, in paragraph 98 of his "Suggestions," dated the 1st November 1879. The total cost of construction was Rs. 410-2-11, towards which the villagers of Srinagar contributed Rs. 309-9-1.

CHAPTER II.

Surveys, Working Plans, and Annual Plans of Operations.

9. The surveys of the Dewair Forest Range and Danta Block were finished. The former was done by the Forest Ranger, the latter having been received from the office of the Assistant Engineer, Nasirabad sub-Division. Tracings of both tracts were sent to the Superintendent of Forest Surveys.

10. It is proposed to take advantage, while the surveyors now employed on the settlement surveys are here, to get skeleton maps of the Forest tracts with the roads, fire lines, and other useful points plotted down on a scale of 4" to a mile. These maps will, no doubt, be of the greatest help when anything like working plans can be drawn up for the Forest tracts; and there is every reason to believe that this will not be long, considering the slow but steady progress they are now making, and the demand for fuel, which is fast increasing.

11. Complete annual plans of operations have not yet been introduced, but it is proposed to have them during the coming year.

CHAPTER III.

(1) Protection and Improvement.

12. *Establishment.*—Five additional Forest guards were entertained on the new tracts during the year. As the work is gradually increasing, a proposal for bettering the prospects of the Forest establishment was sent up for sanction. The matter is under consideration, and it is hoped will shortly be passed, to enable a good class of men being brought into the department.

13. No change has been made in the charge of, and duties performed by, each official in the Forest tracts. Endeavours are, however, being made to employ, whenever an opportunity offers, young men educated at the local schools of the district.

14. The following additional temporary office establishment was entertained during the year at a cost of Rs. 56 per mensem:—

1 clerk on Rs. 30.

1 mohurir for Forest Ranger on Rs. 20.

1 office chaprasi on Rs. 6.

(2) General Protection and Breaches of the Forest Law.

15. There is a considerable decrease over last year in the number of cases tried by Magistrates of the districts, the number amounting to 31 cases, involving 72 persons, against 61 cases, involving 111 persons. In 28 cases, involving 60 persons, convictions were obtained, 3 cases were dismissed, and 1 is pending. Full particulars of the nature of the cases are given in Form No. 52. The fines realized amounted to Rs. 187-13-6. Besides the cases disposed of by Magistrates, 6 cases, involving 10 persons in Merwara, and 30 cases, involving 51 persons in Ajmere, were compounded by the Assistant Conservator of Forests, to whom powers were given by the Chief Commissioner in accordance with Rule II of Forest bye-laws. The amount of compensation realized amounted to Rs. 41-4-0. On the whole, the number of cases brought up for disposal was only 5 in excess of last year; this can easily be accounted for, and is, no doubt, due to the exceedingly bad year. All cases were of a petty nature.

16. The number of cattle impounded during the year was very nearly the same as last year:—

	Cattle impounded during	
	1882-83.	1883-84.
Ajmere	1,326	1,295
Merwara	2,410	2,348
Total	3,736	3,643

The large figures are due to the cattle impounded from the new tracts, which alone amounted to 1,415 head (1,266 in Merwara and 149 in Ajmere), chiefly sheep and goats. On the whole, the year has been a very favourable one and I have no doubt that each year will show a steady decrease in the number of cattle impounded. Every endeavour is being made to fence all portions of the forest where cattle are liable to stray.

The fines for cattle impounded amounted to Rs. 617-8-0, half of which, Rs. 308-12-0, was credited to "Forests."

(3) Forest Fires.

17. The year has been a very favourable one for fire protection; only 5½ acres have been burnt—3 acres in Danta and 2½ acres in the Dewair tracts. The former was burnt through the carelessness of some villagers returning from a fair at Ajmere—the men could not be traced; the latter through the carelessness of some graziers, who lighted a fire in open village forest, the fire spreading into the reserve. In both cases prompt measures were taken by the Forest guards to extinguish the fire, who deserve great credit, as the consequences might have been very serious in a dry year like this. The total expenditure on fire protection has been Rs. 553 against Rs. 606 last year. The lines were all cleared as usual, but as year by year the danger from fire increases,

it will be advisable to construct a few extra lines where the blocks are very large and the danger great.

(4) Grazing and Fencing.

18. In the forest tracts of Merwara open to grazing cattle were admitted from the 1st March 1883 to the 30th of June, and owing to the short monsoons from the 15th February 1884. The grazing still continues.

19. The number of cattle grazing in each tract from the 1st March to the 30th June 1883 was :—

Name of tract.	Number of acres.	Number of cattle grazing.
Todgarh	40,048	3,956
Dewair	12,203	414
Biliawas	3,172	898
Sheopura (excess of cattle originally allowed on first taking up of tract)	1,920	11
Total ...	57,343	5,279

The total amount realized for grazing was Rs. 850-4-0.

20. From the above figures it will be seen that the grazing is light for the total area conserved, but from what I have seen on a careful inspection of the tracts, the villagers do not care to take their cattle far into the jungles, the consequence being that only certain plots adjoining the villages are grazed over, while others have not been touched from the day they were conserved. This, to a certain extent, has affected the reproduction. Endeavours will in future be made to regulate the grazing more evenly through the tracts.

21. The grass was cut freely as usual by the villagers both in Ajmere and Merwara. 3,822 grass permits for six weeks from the 15th October to the end of November were given to the villagers in Ajmere, while the villagers in Merwara were allowed to cut without passes.

It is a matter of regret, which cannot very well be remedied, that very nearly the whole of the grass cut by villagers of the Ajmere district is sold; the consequence is that the cattle do not derive the full benefit from the conservation of these tracts. Grass is very valuable both in Ajmere and Nasirabad, each bundle bringing in from 4 to 8 annas; so that in a year like this the villagers, having sold their grass instead of stacking it, are in a very bad way, and later on, as has been done, all the blocks both in Ajmere and Merwara will have to be thrown open to grazing.

(5) Natural Reproduction.

22. Natural reproduction is very good in all places where there are a certain number of seed-bearing trees, and these, I am happy to state, are fast increasing in all blocks conserved. In the Ajmere blocks especially the gradual increase of seed-bearing trees is very noticeable throughout.

Of the natural seedlings coming up in any number, I may mention—

Dhau (*Anogeissus pendula*).—The seedlings are very plentiful in all the Merwara blocks, except Sheopura and Kotra, under parent trees and wherever there is any shade.

NIM.—A great number of seedlings are springing up under the shade of "thor" bushes; this is especially the case in Ajmere tracts, which protects them from the ravages of porcupines.

SALER.—Numerous seedlings are noticed where parent trees exist.

Kumta, Dhak, Khejra, Arinj, &c., are noticeable, but are less in number.

23. On the whole, the condition of the tracts is very promising, but not sufficient to do away with artificial sowing, owing to the limited number of seed-bearing trees and very large blanks. The blocks worst off are Rajaosi in Ajmere, Kotra, and Sheopura in Merwara. Considering the very great drought it is astonishing to see how very well young sandal seedlings have been getting on in two of the Ajmere tracts. There is no doubt, judging from the way in which the young seedlings are growing, that the seed has been scattered by birds, who have brought it from adjoining gardens into the forest. In both the tracts, Mohwa Bir and Madar Pahar, the soil is very poor, but it appears quite sufficient to enable the sandal, growing under the shade of bushes, to thrive. It is hoped to take advantage of this and naturalize the sandal on a large scale.

(6) ARTIFICIAL REPRODUCTION.

24. As there was very little rain during the monsoons, the entire sowing was a failure; it is hoped, however, that some of the seed sown will germinate next rains. From what I have seen of the sowings done here, it would be advisable to confine attention to utilizing the abundance of thor, growing both on the hill sides and in the open, and sowing seed with a small hand spade under its friendly shade. There is every hope of this plan succeeding.

25. Ten acres in the Mohwa Bir and 10 acres in the Nag Pahar Blocks were cut as compound coppice from May to June. The results have been very satisfactory in both blocks. The following is an average height of shoots of principal trees and shrubs :—

	Feet.
Khejra	5
Dhaukra	3
Dasan	3½
Babul	4
Khair	2½
Saler	3½
Kumta	3

26. Both the Ajmere and Beawar nurseries have not done well, and it is useless to attempt to utilise them for experimental purposes, owing to the very bad water in the wells, the very dusty roads alongside, and the want of shade. It was at first expected that water could be given from the Ana Sagar and Balad tanks, but it has since been found that this cannot be done. In future only the common trees that will grow, will be raised for distribution to householders and for arboricultural purposes.

During the year the following trees were given gratis from the nurseries :—

Householders	628
Executive Engineer, Rajputana-Malwa Railway	2,113
Roads and Public gardens	2,008
Forest tracts	2,567
Total	7,316

For out-stations 2,537 trees were sold from the Ajmere and Beawar nurseries to the Executive Engineer, Rajputana-Malwa Railway. The sum realized was Rs. 76-1-9.

Besides the trees distributed, there are at present 7,792 trees in the Ajmere Nursery and 5,235 in Beawar, as detailed below :—

	Ajmere.	Beawar
Nim	2,100	...
Tamarind	1,400	562
Bans	450	1,010
Siris	2,268	...
Gundi	250	...
Arjan	350	...
Cherril	360	1,200
Bar	...	200
Bahera	...	520
Kaitha	...	200
Kalia	...	250
Patang	...	220
Miscellaneous	614	1,073
Total ...	7,792	5,235

In addition to the sum realized from the sale of plants, Rs. 164 were received for grain grown on spare ground in the nursery. In future all the spare ground available will be utilized for growing green fodder to be stacked in silos.

(7) Experiments and Exotics.

27. Since the Ajmere and Beawar nurseries cannot be used for experimental purposes, it would be advisable to take over the Pokhar garden, which is 6 miles from Ajmere, and at present included in the Nag Pahar Forest tract, but the proceeds of which, realized from the sale of fruit, go to the District Fund, which also pays for the maintenance of the garden, which is nearly a half of the revenue obtained by the sale of fruit. The water in the garden is sweet, and the position good. Some seed has already been sown and the seedlings promise to do well.

Seed of *Eucalyptus viminalis* received from the Government of India was sown in pots in the garden about the middle of January; in February the seedlings were over 6 inches, and were transplanted into beds. Only 5 per cent. of failures occurred. The young plants are now of an average height of 1½ feet and promise to do well.

28. Twelve plants of Ceara rubber were received from the Botanical Gardens, Calcutta, and planted along moist valleys in Ajmere and Merwara, but they have not done well; two only are alive. Further experiments in this will be discontinued. Eighty fruit trees for Beawar Nursery were obtained from the Saharanpur Botanical Gardens. The plants are not doing well owing to the bad water.

(8) Communications and Buildings.

29. Two new inspection paths 4 feet wide were made, one from Taragarh to Bar, through the Biliawas and Ans Pahar tracts, 15½ miles, at a total cost of Rs. 323-0-6, the other from Chipi-devi nál to Kachbali, through a part of the Todgarh tract, 7½ miles, at a cost of Rs. 190-10-6. Both these

paths have proved very useful as inspection paths through parts of the forest nearly inaccessible before. In addition the following inspection paths were repaired.

	Rs.	A.	P.
Nag Pahar	23	6	6
Taragarh Valleys	2	11	0
Dilwara Bir	10	11	6
Total ...	36	13	0

30. The old Bir bungalow in the Srinagar tract was made over to the Forest Department. Rs. 63-7-0 were spent on its repairs and putting on a new thatch. The repairs to old chaukis were as follows:—

	Rs.	A.	P.
Mohwa Bir Chauki	0	13	0
Beawar Nursery Chauki and Ranger's hut	72	14	0
Mali's huts, Ajmere Nursery	21	0	0
Rajaosi Chauki	6	14	0
Srinagar Chauki	3	6	0
Nag Pahar Chauki	2	12	0
General (shed to office verandah)	7	8	3
Total ...	115	3	3

CHAPTER IV.

31. The experiments were not undertaken during the year, as no funds were available, besides which it was expected that Dr. Warth would be deputed to inspect the sites selected by the Assistant Conservator of Forests. His arrival was looked forward to, to very near the end of the official year, when it was thought advisable not to wait any longer. Sites for wells, some of which have since been constructed, rain-gauge stations, two sheds for meteorological observations, since constructed, and springs have been selected, the detailed results of which will be given in next year's Report.

CHAPTER V.

(1) Yield and Working.

32. Departmental operations were extended during the year. An indent for 5,000 cubic feet of firewood and 5 tons of charcoal was received from the Rajputana Malwa Railway. The wood was cut from the Chang and Borwar Blocks, at first on daily labour, which was found to be rather expensive; it was then given out on contract at Rs. 8 per 100 maunds delivered at the Beawar railway station, a distance of 8 miles, care being taken that the men cut the trees flush with the ground, as directed.

33. The cutting was principally the result of compound coppice, very many standards being left in each block, as it was not thought advisable to clean cut the coupe for the present.

34. Measurements to test the number of maunds of green wood in 100 cubic feet were made. The results are given below :—

100 cubic feet Dhaukra, average 35 maunds;

100 cubic feet Kokat, average 42 maunds.

This is somewhat different from the results obtained by Mr. Moir. I have no doubt that the difference is due to the nature of wood cut; the wood not turning out as hollow as was expected.

35. The fuel was delivered at the Ajmere railway station at Rs. 7-4-0 per 100 cubic feet, and charcoal at 45 seers per rupee. In future it is determined to deliver the fuel at the station nearest to the forest.

36. The following statement shows the work done by, and cost of, Government bullocks and buffaloes during the year :—

Place.	Description of work.	No. at beginning of year.	No. at end of year.	Cost of feed and keep.		
				Rs.	A.	P.
Ajmere Nursery ...	Watering	4 bullocks	4 bullocks	25	4	7
Taragarh Valleys ...	"	1 buffalo	1 buffalo	...	....	...
Beawar Nursery ...	"	3 bullocks and 1 buffalo.	3 bullocks and 1 buffalo.	6	1	9
	Total	9	9	31	6	4

(2) REMOVAL OF PRODUCE BY PURCHASERS.

37. The 10 acres in Mohwa Bir and 10 acres in Nag Pahar Blocks were sold by auction to purchasers, who agreed to cut the standing crop according to orders. Some difficulty was at first experienced in getting the purchasers to clean cut the stools; this was eventually got over. In each case a certain number of standards was left as seed-bearers. The amounts realized were in Nag Pahar, Rs. 135, and in Mohwa Bir, Rs. 62, and there is every reason to believe that the increase per acre will be more next year. Unfortunately the area that can possibly be worked in these blocks is very limited, the supply in its present state not exceeding 2 or 3 years.

38. Dry firewood was sold from the following blocks: in the Ajmere blocks by auction, and in Merwara by tickets for head and donkey loads :—

Name of tract.	No. of Loads.		Amount.		
	Head.	Donkey.			
By Auction.			Rs.	A.	P.
Mohwa Bir and Madar Hill	...	...	164	3	0
Taragarh Valleys	...	...	27	5	9
Nag Pahar	...	...	35	[illegible]	0
Rajrosi	...	...	40	0	0
Srinagar	...	...	44	8	0
Danta	...	...	42	8	0
Ajmere Nursery (old)	...	...	10	4	9
Total Ajmere ...	...	...	363	12	9

Name of tract.	No. of Loads. Head	No. of Loads. Donkey.	Amount. Rs	A.	P.
By Auction.					
Chang			156		
Head and Donkey loads.					
Chang	10,273	272	465	5	6
Borwar	...	1,474	295	6	3
Biliawas	...	1,324	265	0	3
Sheopura	Dandas &	Kamree	12	8	0
Bagri Block (Todgarh Range)	3,238	150 21 carts	396	6	6
Total Merwara ...	13,511	3,220 and 21 carts.	1,790	10	6
Grand Total ...	13,511	3,220 & 21 carts	2,154	7	3

39. *Grass and Grazing.*—The revenue derived under this head was Rs. 3,326 in Ajmere and Rs. 1,237 in Merwara. The grass from that portion of the Nag Pahar and Mohwa Bir Blocks not subject to rights was sold by auction as hitherto, the former realizing Rs. 1,000, while the latter fetched Rs. 500. Nine stacks of grass cut from the blocks in the Ajmere sub-Division were sold by auction for Rs. 1,508-14-8. The Commissariat Officer was also supplied with 371 maunds for Rs. 148-7-1.

40. The amount of revenue derived from the Dewair Pass and credited to grazing dues was Rs. 232-12-5. There is a falling off in the collections, said to be due to the opening of the railway from Ajmere to Chittor, which has taken away a good part of the carriage of salt from the Banjaras, who formerly used to convey it from Marwar into Meywar on their pack bullocks.

41. The total sales of minor forest produce amounted to Rs. 66-9-9 in Merwara and Rs. 549-2-0 in Ajmere. The sum realized in Merwara was chiefly from the sales of honey and wax, while in Ajmere Rs. 341-1-0 were realized by miscellaneous sales from the Ajmere Nursery, and the balance from fruit of the mango trees in the forest.

42. The total amount realized from the sale of confiscated wood was Rs. 3-0-6.

43. The total amount of fines was Rs. 497-9-6. Of this, Rs. 309-12-6 were from pound fines and Rs. 187-13-6 from fines.

44. The revenue from other sources amounted to Rs. 58-10-0.

(3) Free Grants of Produce.

45. Free grants were made to those villagers having a right in the forest. The following statement gives the total quantity granted :—

	No.
Jungle-wood poles	2,135
Plough pieces	18

In all cases the villagers were liberally treated both with grass and wood.

CHAPTER VI.

Financial Results.

46. The following statement shows the results of the year, as compared with the results of the two previous years:—

	1881-82	1882-83	1883-84
	Rs	Rs	Rs
Receipts	4,066	7,126	8,198
Expenditure (a) Conservancy and Works ...	5,631	3,689	4,100
Expenditure (b) Establishments ...	8,323	7,595	10,474
Total Expenditure ..	13,954	11,284	14,574
Deficit ...	9,888	4,158	6,376

47. In the following statement the receipts and expenditure for the year are given under the three main heads.—

	Receipts	Charges.
	Rs.	Rs
I.—Timber and other produce removed by Government agency ...	106	402
II —Other revenue	8,092	3,850
III.—Formation, protection, and improvement of forests ...	..	10,322
Total .	8,198	14,574

48. *Revenue.*—The revenue exceeded that of the previous year by Rs. 1,071-12-3, which amount is made up as follows:—

(a) Departmental Work.

While there was a decrease in firewood and charcoal of Rs. 118-10-11, due chiefly to outstandings, there was an increase in grass of Rs. 37-13-0 sold to the Commissariat for troops moving to Nasirabad.

(b) Produce removed by Consumers or Purchasers.

The revenue in firewood and charcoal was increased by Rs. 97-0-2 owing to a greater demand. The revenue on bamboos was reduced by Rs. 63-4-0, due to decreased sales and cuttings. The increase in grazing and sales of grass amounted to Rs. 842-1-9. Minor produce shows an increase of Rs. 373-12-9.

(c) Confiscated Wood.

This shows an increase of Rs. 1-10-6.

(d) Miscellaneous.

The decrease was Rs. 68-11-0.

49. *Expenditure.*—The expenditure exceeded that of the previous year by Rs. 3,290-11-4. This was chiefly due to a higher rate of pay of establishment.

50. The outstandings of revenue at the close of the year amounted to Rs. 482-8-0, due from the Rajputana-Malwa Railway for firewood and charcoal supplied to them.

CHAPTER VII.

General Remarks.

51. A collection of woods, consisting of 106 pieces, cut from the forests in blocks 6″ × 4″ × 2″ with the bark left on one side, was sent to the Edinburgh Forestry Exhibition.

52. The Forest establishment has, on the whole, worked well. Forest Ranger Sahib Roy has done good work.

53. The office work has been carried on very satisfactorily by both the clerk and the munshi.

Annual Form No. 49.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Reserved Forests, 1883-84.

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1883.		Added during the Year.	Excluded or transferred to other Heads.	Area on 1st March 1884.		No. and date of Notification of addition or transfer.	Remarks.
			Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.		
AJMERE-MERWARA	AJMERE ...	Mohwa and Madar Hill	2,812	4	...	...	2,812	4		
		Nag Pahar	2,660	4	...	...	2,660	4		
		Taragarh Valleys	1,016	2	...	...	1,016	2		
		Srinagar and Bir	3,575	6	...	...	3,575	6		
		Rajaosi	1,260	2	...	...	1,260	2		
		Danta	1,244	2	...	...	1,244	2		
		Rajgarh	...	...	2,885	...	2,885	4	"Gazette of India." Part II, dated 22nd March 1884, pages 184 and 185.	
		Total ...	12,567	20	2,885	...	15,452	24		
	MERWARA ...	Chang	2,341	4	...	...	2,341	4		
		Hattun and Sheopura	1,920	3	1,000	...	2,920	5	Ditto.	
		Biliawas and Taragarh	3,172	5	...	...	3,172	5		
		Todgarh and Barakhan	40,048	63	...	...	40,048	63		
		Dilwara and Chang Birs	235	...	...	..	235	..		
		Borwar Kotra	3,923	6	620	...	4,543	[illegible]	Ditto.	
		Ans Pahar	1,466	2	...	...	1,466	2		
		Dewair	12,203	19	...	...	12,203	19		
		Banjari Mandlan	...	...	4,500	...	4,500	7	Ditto.	
		Amner Kukra	...	...	2,300	...	2,300	4	Ditto.	
		Total ...	65,308	102	8,420	...	73,728	116		
		Grand Total ...	77,875	122	11,305	...	89,180	140		

Annual Form No. 50.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Plantations, 1883-84.

Division.	Name of Plantation.	On 1st April 1883.		Added during 1883-84.		On 31st March 1884.		* Remarks.
		Area.	Cost.	Area.	Cost.	Total Area.	Total Cost.	
		Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	
	Out of the area taken up under the Regulation.							
Ajmere	Mohwa and Madar Hill	53	7,920	.....	46	53	7,966	
	Nag Pahar	18	8,536	.....	10	18	8,576	
	Taragarh Valleys	78	9,143	.....	107	78	9,250	
	Srinagar Bir	6	1,015	.....	16	6	1,031	
	Dauta	1	3	.....	19	1	22	
	Total ...	156	26,647	.....	198	156	26,845	
Merwara	Chang tract	15	1,686	.....	17	15	1,703	
	Hattun and Sheopura	30	1,505	.....	.....	30	1,505	
	Biliawas and Taragarh	12	987	.....	.....	12	987	
	Todgarh and Barakhan	46	985	.....	5	46	990	
	Borwar and Kotra	2	33	.....	.....	2	33	
	Dilwara and Chang Bir	66	1,066	.....	127	66	1,193	
	Total ...	171	6,262	.....	149	171	6,411	
	Grand Total ...	327	32,909	.....	347	327	33,256	
	Tracts not taken up under the Regulation.							
Ajmere	Shikast Masjid	6	1,358	.....	64	6	1,422	
Merwara	Parade Plantation	8	1,727	.....	.....	8	1,727	
	Total ...	14	3,085	.....	64	14	3,149	
	Total Plantation ...	341	35,994	...	411	341	36,405	
	Nurseries.							
Ajmere	Ajmere Nursery	10	5,275	.....	527	10	5,802	
Merwara	Beawar Nursery	4	465	.....	359	4	824	
	Total ...	14	5,740	.....	886	14	6,626	
	Written to Profit and Loss for plants supplied gratis	.....	851	..	..	.....	851	
	Cultural Operations	.....	209		.. ..	.. ...	209	
	Total ...	355	42,794	.....	1,297	355	44,091	

Form No. 51.—[*Suggested.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Forest Tracts protected from fire during the dry season of 1884 (to accompany Report for 1883-84).

Division.	Forest Tracts.	Up to 30th June 1883.		During the dry Season of 1884.				Total Cost up to 30th June 1884.	Year when protection commenced.	Remarks.
		Area actually protected.	Total cost.	Area attempted to be protected.	Failures.	Area actually protected.	Amount expended.			
		Acres.	Rs. A. P.	Acres.	Acres.	Acres.	Rs. A. P.	Rs. A. P.		
Ajmere ...	Mohwa and Madar Hill ...	2.806	55 11 6	2,812	...	2,812	...	55 11 6	...	
	Nag Pahar ...	2,660	133 8 10	2,660	...	2.660	27 1 5	160 10 3	1880	
	Taragarh Valleys ...	1,016	295 12 8	1,016	...	1,016	23 1 5	318 14 1	1874	
	Srinagar Bir ...	3,575	67 8 6	3,575	...	3,575	...	67 8 6	1880	
	Rajaosi tract ...	1,260	165 2 10	1.260	...	1.260	34 14 3	200 1 1	1880	
	Danta tract ...	1,244	44 2 2	1,244	3	1.241	18 14 3	63 0 5	1882	
	Rajgarh ...	...	...	2,885	...	2,885	...	...	1884	Subject to correction.
	Total ...	12,561	761 14 6	15,452	3	15,449	103 15 4	865 13 10	...	
Merwara ...	Chang ...	2,341	87 0 0	2,341	...	2.341	32 15 3	119 15 3	1881	
	Hattun and Sheopura ...	1.920	8 8 0	2,920	...	2,920	4 4 0	12 12 0	1882	
	Biliawas and Taragarh ...	3,172	575 2 0	3,172	...	3,172	32 8 6	607 10 6	1874	
	Todgarh and Barakhan ...	40,041	3,908 6 3	40.048	...	40,048	253 4 0	4,161 10 3	1874	
	Dilwara and Chang Birs ...	235	...	235	...	235	...	...	...	
	Borwar Kotra ...	3.923	35 1 6	4.543	...	4,543	15 15 6	51 1 0	1882	
	Ans Pahar ...	1,466	328 2 0	1,466	...	1.466	24 12 0	352 14 0	1877	
	Dewair tract ...	12,203	332 15 0	12,203	2	12,201	85 13 0	418 12 0	1881	
	Banjari Mandlan ...	...	...	4,500	...	4,500	...	...	1884	Subject to correction.
	Amner Kukra ...	...	...	2,300	...	2.300	...	...	1884	Subject to correction.
	Total ...	65,301	5.275 2 9	73,728	2	73.726	449 8 3	5,724 11 0	...	
	Grand Total ...	77.862	6,037 1 3	89,180	5	89,175	553 7 7	6,590 8 10	...	

Charged in previous years ...	...	5,863 10 3
Charged in 1883-84 ...	...	547 11 9
Charged in 1884-85 ...	...	179 2 10
Total	...	6,590 8 10

Annual Form No. 52.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Prosecutions for breaches of Forest Rules during 1883-84.

Forest Division and Civil District	Cases pending from 1882-83.	New Cases of the Year.					Total cases.	Disposed of during the Year.						Cases pending at close of year.
		Injury to forest by fire.	Unauthorized felling or appropriation of wood and minor forest produce.	Grazing without permission or in tracts in which grazing is prohibited.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Ajmere ... Mchwa Bir and Madar Hill ...	...	...	3	...	...	3	3	1	1	2	5	3	6	...
Ajmere ... Nag Pahar ...	...	...	3	...	...	3	3	3	3	...	...	3	3	...
Ajmere ... Taragarh Valleys	...	...	4	...	1	5	5	5	11	...	5	5	16	...
Ajmere ... Srinagar Bir ...	...	...	7	...	...	7	7	7	14	...	...	7	14	...
Ajmere ... Rajaosi ...	...	...	1	...	...	1	1	1	1	...	...	1	1	...
Ajmere ... Danta ...	...	...	3	...	...	3	3	2	3	1	2	3	5	...
Ajmere ... Total ...	...	...	21	..	1	22	22	19	33	3	12	22	45	..
Merwara. Chang tract ...	...	1	1	1	...	3	3	2	6	...	...	2	6	1
Merwara. Chang and Dilwara	...	...	1	...	...	1	1	1	1	...	...	1	1	.
Merwara. Borwar Kotra ...	...	...	2	1	..	3	3	3	3	...	...	3	3	...
Merwara. Todgarh ...	1	...	..	...	...	...	1	1	6	...	...	1	6	...
Merwara. Dewair ...	...	...	2	...	...	2	2	2	11	...	...	2	11	...
Merwara. Total ...	1	1	6	2	...	9	10	9	27	...	...	9	27	1
Grand Total ...	1	1	27	2	1	31	32	28	60	3	12	31	72	1

Annual Form No. 53.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Summary of Revenue and Expenditure for 1883-84.

BUDGET HEADS.

REVENUE.

	Rs.	A.	P.
I.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY GOVERNMENT AGENCY :—			
(*a*) Timber	.....		
(*b*) Firewood and charcoal	68	12	6
(*c*) Bamboos	.....		
(*d*) Sandal-wood	.....		
(*e*) Grass and other minor produce	37	13	0
II.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS :—			
(*a*) Timber	.....		
(*b*) Firewood and charcoal	2,351	7	3
(*c*) Bamboos	2	8	0
(*d*) Grazing and fodder grass	4,562	10	2
(*e*) Other minor produce	615	11	9
III.—CONFISCATED, DRIFT AND WAIF WOOD	3	0	6
IV.—REVENUE FROM FORESTS NOT MANAGED BY GOVERNMENT :—			
(*a*) Duty on foreign timber and other forest produce ...	.....		
(*b*) Revenue from shared and private forests	.....		
V.—MISCELLANEOUS :—			
(*a*) Fines and forfeitures	497	9	6
(*b*) Refunds	.....		
(*c*) Other sources	58	10	0
TOTAL REVENUE ..	8,198	2	8

EXPENDITURE.

A.—Conservancy and Works.

I.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY GOVERNMENT AGENCY :—			
(*a*) Timber	.....		
(*b*) Firewood and charcoal	395	9	3
(*c*) Bamboos	.....		
(*d*) Sandal-wood	.....		
(*e*) Grass and other minor produce	6	4	0
II.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS	77	4	0
III.—CONFISCATED, DRIFT AND WAIF WOOD	.....		
IV.—REVENUE FROM FORESTS NOT MANAGED BY GOVERNMENT :—			
(*a*) Duty on foreign timber and other forest produce ...	.....		
(*b*) Revenue from shared and private forests	.....		
V.—RENT OF LEASED FORESTS AND PAYMENTS TO SHAREHOLDERS IN FORESTS MANAGED BY GOVERNMENT	.....		
Carried forward ...	479	1	3

EXPENDITURE.—(*contd.*)

	Rs.	A.	P.
Brought forward ...	4,[illegible]9	[illegible]	3
VI.—Live Stock, Stores, Tools and Plant :—			
(*a*) Purchase of cattle	.....		
(*b*) Feed and keep of cattle	31	6	4
(*c*) Stores, tools and plant	291	4	8
VII.—Communications and Buildings :—			
(*a*) Roads and bridges	550	8	0
(*b*) Buildings	178	10	3
(*c*) Other works	.....		
VIII.—Demarcation, improvement and extension of Forests :—			
(*a*) Demarcation	2	2	0
(*b*) Compensation for land and rights	.....		
(*c*) Surveys and working plans	9	1	0
(*d*) Plantations	1,297	0	2
(*e*) Protection from fire	547	11	9
(*f*) Other works	610	15	6
IX.—Miscellaneous :—			
(*a*) Refunds	.....		
(*b*) Law charges	.....		
(*c*) Other charges	101	14	1
Total A.—Conservancy and Works ...	4,099	11	0
B.—Establishments.			
I.—Salaries :—			
(*a*) Conservators	.....		
(*b*) Superior officers	2,840	0	0
(*c*) Subordinate forest and depôt establishments	4,402	2	2
(*d*) Office establishments	1,631	11	3
(*e*) Deputation and special allowances	.....		
II.—Travelling Allowances :—			
(*a*) Conservators	.....		
(*b*) Superior officers	898	2	10
(*c*) Subordinate forest and depôt establishments	224	4	2
(*d*) Office establishments	48	0	8
III.—Contingencies :—			
(*a*) Stationery...	34	5	0
(*b*) Carriage of tents and records	180	7	1
(*c*) rents, rates, and taxes	.....		
(*d*) Pay of police guards	.....		
(*e*) Official postage	55	9	0
(*f*) Sundries	159	15	7
Total B.—Establishments ...	10,474	9	9
Grand Total of Expenditure ...	14,574	4	9

Annual Form No. 54.—[*Prescribed.*]

FOREST DEPARTMENT AJMERE-MERWARA.

Account Current for the year 1883-84.

Dr.

	Rs.	A.	P.		Rs.	A.	P.
To Cash Balance	.....			By Expenditure, as per details in the annual summary ...	14,574	4	9
„ Revenue, as per details in the annual summary	8,198	2	8	„ Deposits	3	6	3
„ Forest Cash Remittances (Local)—				„ Forest Cash Remittances (Local)—			
Remittance from State Treasuries	14,576	10	1	Remittance to State Treasuries	8,194	12	5
„ Advances Recoverable	1,179	0	10	Advances Recoverable	897	13	3
„ Government of the North-Western Provinces and Oudh ...	12	2	0	Civil Department—			
„ Inter-Departmental Transfers—				Rewards for passing examination	360	0	0
Civil Department, Mathematical Instrument Department...	212	3	0	Cash Balance	147	13	11
Total ...	24,178	2	7	Total ...	24,178	2	7

Annual Form No. 55.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWÂRÂ.

Outstandings and Liabilities on account of Contractors and Disbursers for 1883-84.

Division.	Department Debtor.			Department Creditor.			Balance Due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstandings).	By Department (Liabilities).	
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Ajmere-Merwara ...	191 9 7	1,179 0 10	1,370 10 5	456 13 4	897 13 3	1,354 10 7	1 10 6	17 10 4	
Total ...	191 9 7	1,179 0 10	1,370 10 5	456 13 4	897 13 3	1,354 10 7	1 10 6	17 10 4	.....

Annual Form No. 56.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Revenue received and outstandings on account of Revenue during 1883-84.

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue during Year.	Total.	Amount realized during Year.	Balance due to the Department at end of Year.	Remarks.
Ajmere-Merwara	.....	...	8,680 10 8	8,680 10 8	8,198 2 8	*482 8 0	*From Public Departments Rs. A. P. 362 8 0 From private purchasers 120 0 0 482 8 0
	Total ...	...	8,680 10 8	8,680 10 8	8,198 2 8	482 8 0	

Form No. 57.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Financial results of the year 1883-84.

Division.	Timber and other Produce removed from the Forests by Government agency.		Other Revenue.		Formation, Protection, and Improvement of Forests.	Total.		Remarks.
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Ajmere-Merwara ...	*106	402	8,092	3,850	10,322	8,198	14,574	* Rs. 482-8-0 were outstanding at the end of the year from the Rajputana-Malwa Railway.
Total ...	106*	402	8,092	3,850	10,322	8,198	14,574	

Form No. 59.—[*Suggested.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Outturn of Timber and other Produce cut and collected by Government agency during the year 1883-84.

Division.	PRODUCE CUT AND COLLECTED.				Remarks.
	How obtained.	Description.	Number or quantity.		
			Maunds.	Cubic feet.	
Merwara sub-Division ...	Compound coppice. ...	Firewood ...	.....	5,000	
		Charcoal ...	160	.....	
	Total ...		160	5,000	

Annual Form No. 61.—[*Suggested.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Sales of Timber and other Produce cut and collected by Government agency during 1883-84.

Division.	Depôt or locality.	PRODUCE SOLD.			Remarks.
		Description.	Number or quantity.		
			Maunds.	Cubic feet.	
Ajmere—Merwara ...	Ajmere ...	Firewood ...	...	5,000	
	Do.	Charcoal ...	135	...	
	Beawar ...	Charcoal ...	25	...	
	Total ...		160	5,000	

Annual Form No. 62.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Account of Timber and other Produce cut or collected by Government agency and brought to Sale Depôts or sold locally during the year 1883-84.

Particulars.	Number or quantity.		Total of each head. (Number or quantity.)		Particulars.	Number or quantity.		Total of each head. (Number or quantity.)	
	Maunds.	Cubic feet.	Maunds.	Cubic feet.		Maunds.	Cubic feet.	Maunds.	Cubic feet.
Received from the Forests and sold locally					Sold locally				
Firewood	...	5,000	...	5,000	Firewood...	...	5,000	...	5,000
Charcoal	160	...	160	...	Charcoal	160	...	160	...
Total ...	160	5,000	160	5,000	Total ...	160	5,000	160	5,000

Form No. 63.—[*Suggested.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Timber and other Produce cut, collected, and removed from the forests by consumers or purchasers, including pasture, during the year 1883-84.

Division.	Produce removed. Description.		Number or quantity.	Amount of Revenue.	Amount actually realized during the year.	Remarks.
				Rs.	Rs.	
Ajmere-Merwara	Firewood	Maunds.	19,389	2,352	2,352	Estimated maunds.
	Bamboos	No.	100	2	2	
	Grass	...	Sold by auction and locally.	3,480	3,480	
	Grazing	Cattle	49,322	1,083	1,083	Number of cattle includes cattle passing through Dewair Pass.
	Fruits, plants, &c. ...	..	...	615	615	
	Total	...		7,532	7,532	

AJMERE SUB-DIVISION.

Forest Revenue for the year 1883-84.

Budget Heads.	Mohwa Bir and Madar Hill.	Taragarh Valleys.	Nag Pahar.	Srinagar.	Rajaosi.	Danta.	Rajgarh.	Shikast Musjid.	Ajmere Nursery.	General.	Total.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
I*b*. Firewood and Charcoal ...	16 9 0	7 0 0	6 10 6	...	...	...	...	...	...	...	30 3 6
II*b*. Ditto Ditto	226 3 0	27 5 9	170 0 0	44 8 0	40 0 0	42 8 0	...	...	10 4 0	...	560 12 9
II*c*. Bamboos	...	...	0 8 0	...	...	...	...	...	...	...	0 8 0
II*d*. Grass and grazing	807 13 0	380 13 4	1,000 8 0	752 6 7	...	352 15 1	...	31 0 0	...	...	3,325 8 0
II*e*. Minor produce	...	137 5 0	33 0 0	17 12 0	...	...	...	20 0 0	341 1 0	...	549 2 0
III. Confiscated wood	0 0 6	...	1 1 6	3 0	0 1 6	0 8 0	...	...	...	...	2 14 6
V*a*. Fines and forfeitures	13 14 0	15 13 9	59 1 3	56 12 0	2 0 0	19 2 9	5 2 0	1 14 0	0 5 0	...	174 0 9
V*c*. Miscellaneous	...	...	...	47 0 0	...	...	...	...	...	8 3 9	55 3 9
Total ...	1,064 7 6	568 5 10	1,270 13 3	919 9 7	42 1 6	415 1 10	5 2 0	52 14 0	351 10 0	8 3 9	4,698 5 3

Expenditure, 1883-84.

Budget Heads.	Mohwa Bir and Madar Hill.	Nag Pahar.	Taragarh Valleys.	Srinagar tract.	Rajaosi tract.	Danta tract.	Rajgarh tract.	Shikast Musjid.	Ajmere Nursery.	General.	Total.	Remarks.
A.—Conservancy and Works.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
I*b*. Firewood and charcoal ...	8 10 0	6 12 0	0 6 0	...	...	...	...	...	...	...	1 12 0	
II. Timber, &c., removed by purchasers ...	...	...	...	...	...	0 4 0	...	...	...	...	0 4 0	
VI*b*. Feed and keep of cattle	...	...	...	...	...	...	...	...	25 4 7	...	25 4 7	
VI*c*. Stores, tools and plant	...	...	...	0 8 0	...	...	...	...	1 10 0	280 10 11	282 12 11	
VII*a*. Roads and bridges	...	23 6 6	2 11 0	...	...	...	...	...	...	...	26 1 6	
VII*b*. Buildings	0 13 0	2 12 0	...	3 6 0	6 14 0	...	...	...	21 0 0	70 15 3	105 12 3	
VIII*a*. Demarcation	...	0 6 0	...	...	...	...	...	...	...	...	0 6 0	
VIII*d*. Plantations. Pay of malis and bhistis	...	...	71 8 0	...	...	...	...	59 8 0	376 13 0	...	507 13 0	
Cost of watering apparatus	...	...	13 3 4	...	...	...	...	4 2 0	37 15 1	...	55 4 5	
Sowing operations	43 11 10	3 0 0	22 11 0	16 7 10	...	16 2 4	...	...	101 14 6	6 11 0	210 10 6	Rs. 789 3 5
Planting trees	1 12 6	7 5 0	..	...	...	2 13 0	...	...	...	3 9 0	15 7 6	
VIII*e*. Fire protection	...	32 6 3	23 14 9	...	49 14 9	14 14 9	...	...	...	...	121 2 6	
VIII*f*. Fencing	197 8 10	125 7 0	...	157 9 2	56 10 0	73 12 6	...	...	...	...	610 15 6	
IX*c*. Miscellaneous	...	...	...	...	...	...	...	...	11 2 0	86 1 1	97 3 1	
Total	252 8 2	201 6 9	134 6 1	177 15 0	113 6 9	107 14 7	...	63 10 0	575 11 2	447 15 3	2,074 13 9	
B.—Establishments.												
I*b*. Pay of superior officers	...	...	...	...	...	...	...	...	...	2,840 0 0	2,840 0 0	
I*c*. Pay of protective establishment ...	173 2 0	147 3 6	153 10 8	302 9 10	162 12 7	77 6 8	66 11 10	...	...	283 0 5	1,366 9 6	
I*d*. „ office „	...	...	...	...	...	...	...	..	...	1,495 0 7	1,495 0 7	
II*b*. Travelling allowance of superior officers ...	...	...	...	...	...	...	...	...	...	898 2 10	898 2 10	
II*d*. „ Office establishment	...	...	...	...	...	...	...	...	...	44 1 1	44 1 1	
III*a*. Country stationery	...	...	...	...	...	...	...	...	...	8 1 0	8 1 0	
III*b*. Carriage of tents and records ...	...	...	...	...	...	...	...	...	...	64 7 1	64 7 1	
III*e*. Official postage	...	...	...	...	...	...	...	...	...	46 6 6	46 6 6	
III*f*. Sundries	...	...	...	...	...	...	...	...	...	144 14 7	144 14 7	
Total	173 2 0	147 3 6	153 10 8	302 9 10	162 12 7	77 6 8	66 11 10	...	...	5,824 2 1	6,907 11 2	
GRAND TOTAL	425 10 2	348 10 3	288 0 9	480 8 10	276 3 4	185 5 3	66 11 10	63 10 0	575 11 2	6,272 1 4	8,982 8 11	

MERWARA SUB-DIVISION.

Forest Revenue for the year 1883-84.

Budget Heads.	Chang tract.	Hattun and Sheopura.	Biliawas.	Todgarh.	Dilwara and Chang Birs.	Ans Pahar.	Borwar and Kotra.	Dewair Tract.	Amner Tract.	Banjari Mandlan.	Beawar Nursery.	General.	Total.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P
I*b*. Firewood and charcoal ...	30 10 0	...	...	...	...	...	7 15 0	...	...	...	...	...	38 9 0
I*e*. Grass and other produce ...	...	...	...	...	12 11 6	...	25 1 6	...	...	...	...	...	37 13 0
II*b*. Firewood and charcoal ...	821 5 0	12 8 0	265 0 3	396 6 6	...	...	295 6 3	...	...	...	...	...	1,790 10 6
II*c*. Bamboos	...	...	...	2 0 0	...	...	...	...	...	...	...	...	2 0 0
II*d*. Grazing and grass ...	...	9 8 0	129 6 0	657 10 0	109 14 9	0 14 0	37 13 0	292 0 5	...	...	...	...	1,237 2 2
II*e*. Minor produce ...	3 0 0	...	...	26 9 6	...	3 8 0	5 0 0	11 0 0	...	...	17 8 3	...	66 9 9
III. Confiscated wood ...	0 2 0	...	...	...	...	...	...	...	...	...	...	...	0 2 0
V*a*. Fines and forfeitures ...	13 1 6	2 10 0	1 12 0	127 5 0	11 14 6	1 2 0	44 5 9	23 5 0	14 0 6	71 0 6	12 5 0	0 11 0	323 8 9
V*c*. Miscellaneous ...	...	...	...	...	...	...	...	...	...	...	...	3 6 3	3 6 3
Total ...	868 3 0	24 10 0	396 2 3	1,209 15 0	134 8 9	5 8 0	415 9 6	326 5 5	14 0 6	71 0 6	29 13 3	4 1 3	3,499 13 5

Expenditure, 1883-84.

Budget Heads.	Chang Tract.	Dilwara and Chang Birs.	Biliawas Tract.	Ans Pahar.	Hattun and Sheopura.	Borwar Kotra.	Todgarh Tract.	Dewair Tract.	Amner Tract.	Banjari Mandlan.	Beawar Nursery.	General.	Total.	Remarks.
A.—Conservancy and Works	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Ib. Firewood and charcoal ...	243 12 9	...	..	...	..	136 0 6	...	...	...	...	..	...	379 13 3	
Ie. Grass and other produce ...	...	1 4 0	.	...	...	5 0 0	...	...	...	...	..	...	6 4 0	
II. Timber, &c., removed by purchasers.	...	...		..	.	...	...	77 0 0	...	...	...	...	77 0 0	
VIb. Feed and keep of cattle ...	...	...	.	...	...	...	...	..	...	...	6 1 9	...	6 1 9	
VIc. Stores, tools and plant ...	...	...		...		...	..	...	...	...	0 7 3	8 0 6	8 7 9	
VIIa. Roads and bridges	...	10 11 6	323 0 6	...	...	...	190 10 6	..	.	...	..	...	524 6 6	
VIIb. Buildings	..	...	...	..	..	...	...	...	.		40 4 0	32 10 0	72 14 0	
VIIIa. Demarcation	.	...	...	...	...	...	...	...	...	...	..	1 12 0	1 12 0	
VIIIc. Surveys	...	...	.	..	...	...	...	9 1 0	...	..	...	..	9 1 0	
VIIId. Plantations. Pay of malis and bhistis ...	...	57 13 9	.	...	...	...	...	.		...	240 0 0	.	297 13 9	
VIIId. Plantations. Cost of watering apparatus ...	...	2 4 0	...	...	...	...	...	..	...	...	42 9 6	...	44 13 6	
VIIId. Plantations. Sowing operations	16 4 0	...	...	...	...	...	...	..	...	...	3 7 0	2 4 0	21 15 0	507 12 9
VIIId. Plantations. Planting trees	0 3 0	67 4 6	...	...	..	...	5 0 0	...	...	.	70 11 0	...	143 2 6	
VIIIe. Fire protection	32 15 3	...	32 8 6	24 12 0	4 4 0	15 15 6	244 14 0	71 4 0	...	.	..	...	426 9 3	
IXc. Miscellaneous	...	...	.	..	...	...	...	...	...	..	4 3 0	0 8 0	4 11 0	
Total ...	293 3 0	139 5 9	355 9 0	24 12 0	4 4 0	157 0 0	440 8 6	157 5 0	...		407 11 6	45 2 6	2,024 13 3	
B.—Establishments.														
Ic. Pay of protective establishment...	241 6 9	73 0 0	202 7 9	175 0 0	140 2 0	222 0 0	655 3 8	360 4 7	40 11 11	85 4 0	...	840 0 0	3,035 8 8	
Id. „ Office establishment ...	..	...		..	.	...	...	..	...		...	136 10 8	136 10 8	
IIc. Travelling Allowance of protective establishment.	...		...	...	.	...	...	..	...	..	...	224 4 2	224 4 2	
IId. „ „ Office „ .	...	...	...	...	...	..	..	.	...	...	..	3 15 7	3 15 7	
IIIa. Country stationery	..	...	...	...	..	...	.	...	.	..	..	26 4 0	26 4 0	
IIIb. Carriage of tents and records ..	..	..	.	...		...		.	...	...		116 0 0	116 0 0	
IIIe. Official postage	...	...	...	...	..	..	...	.	...	...	.	9 2 6	9 2 6	
IIIf. Sundries		...	...	...		...	..	...		.		15 1 0	15 1 0	
Total ...	241 6 9	73 0 0	202 7 9	175 0 0	140 2 0	222 0 0	655 3 8	360 4 7	40 11 11	85 4 0		1,371 5 11	3,566 14 7	
GRAND TOTAL ..	534 9 9	212 5 9	558 0 9	199 12 0	144 6 0	379 0 0	1,095 12 2	517 9 7	40 11 11	85 4 0	407 11 6	1,416 8 5	5,591 11 10	

G. C. B. Press, Simla.—No. 541 H. D.—13-10-84.—280.

PROGRESS REPORT

OF

FOREST ADMINISTRATION

IN

AJMERE-MERWARA

FOR

1884-85.

BY

A. E. LOWRIE, Esq.,
ASSISTANT CONSERVATOR OF FORESTS.

WITH REMARKS BY THE ASSISTANT COMMISSIONERS, A REVIEW BY THE CHIEF COMMISSIONER,

AND

ORDERS BY THE GOVERNMENT OF INDIA.

1885.

No. 1010F., dated Simla, the 19th October 1885.

From—A. MACKENZIE, Esq., Secretary to the Government of India, Home Dept.,

To—The Chief Commissioner of Ajmere.

I AM directed to acknowledge the receipt of your letter No. 2573-S., dated the 10th ultimo, submitting the Report of Forest Administration in Ajmere-Merwara for 1884-85, with a review by yourself and notes by the Assistant Commissioners of Ajmere and Merwara.

2. The area of the reserves has, in the course of the year under review, been increased by 5 square miles, by the addition of a new reserve, and comprises now 144 square miles. It is noticed that proposals have been matured for forming extensive village reserves, comprising nearly 33 square miles in Ajmere, and close on 19 square miles in Merwara. This is very satisfactory, as, though 10 per cent. of the total Khalsa area is now under reservation, the area reserved amounts to only 5 per cent. of the total area of the two Districts, and it is evident that, to provide for the probable requirements of the population, the forest area cannot be restricted to one special class of property.

3. The demarcation of the reserves by pillars, fences and stone walls has made satisfactory progress, and old boundaries have been kept in good repair. The record of rights within the reserved forests has, it is stated, been nearly completed, and skeleton maps of the property are being prepared.

4. The general protection of the forests has, to judge from the following table, which shows a considerable increase in forest offences as well as cattle trespass, been rendered somewhat more difficult than in previous years, owing, it is said, to the partial failure of the rains :—

Year.	Number of new cases.			Percentage of convictions to total number of cases decided by Courts.
	Taken into Court.	Compounded.	Total.	
1884-85	47	48	95	90
1883-84	31	36	67	90
Increase in 1884-85	16	12	28	...

Number of cattle impounded for trespass.

1884-85	4,200
1883-84	3,643
Increase in 1884-85	557

The percentage of convictions has, however, been maintained at the same high average of 90 per cent., which in itself is sufficient proof that the prosecutions were generally undertaken on good grounds. The cattle impounded, it is observed, were chiefly goats, the strict exclusion of which is indispensable to the success of forest conservancy. Fire protection has again been eminently successful and very cheap, which is all the more creditable as the season was by no means favourable.

5. The beneficial results of fire protection appear to have been of considerable advantage to the surrounding population. Not only were upwards of seven lakhs of bundles of grass removed from the reserves, but the authorities were enabled to permit grazing during a period of great scarcity of fodder, hereby apparently saving a considerable number of cattle which would

otherwise have perished. Experiments should be continued of storing in silos the surplus fodder produced during seasons of plenty, though the method may not at once commend itself to the conservative villagers.

6. The development of natural reproduction of tree vegetation in deteriorated forest lands requires time, and it cannot be expected that new phases in the slow progress of recuperation should follow each other so rapidly as to deserve notice in each succeeding Progress Report. It is consequently satisfactory to notice that nothing more serious has occurred to counteract reproduction than the increase of porcupines. Though, however, it would not be feasible to review annually the progress of natural reproduction over large areas, I am to suggest that pattern areas be selected, of a few acres each in extent, on which the progress of natural reproduction should be studied in detail. These areas should be fenced separately. The satisfactory results of artificial planting and sowing show that attention and care are bestowed on this subject, but it is evident that it can never replace natural reproduction.

7. The experiments regarding the indirect effects of forest protection are apparently undertaken with judgment and carried out with care, and will doubtless prove eventually of considerable value to both science and forestry. At present it would be premature to draw conclusions from them.

8. The financial results of the year under review, compared with those of the previous year, are as follows :—

Year.	Receipts.	Charges.	Deficit.
	Rs.	Rs.	Rs.
1884-85	10,456	16,315	5,859
1883-84	8,198	14,574	6,376
Increase or decrease in 1884-85	2,258	1,741	-517

9. The Governor General in Council has every reason to be satisfied with the year's working.

No. 1011F.

COPY, with copy of the Report, forwarded to the Government of the North-Western Provinces and Oudh for communication to the Conservator of Forests of the School Circle.

No. 1012F.

COPY, with copy of the Report, forwarded to the Foreign Department for information.

G. C. B. Press, Simla.—No. 899 H. D.—23-10-85.—280.

REPORT OF FOREST ADMINISTRATION IN AJMERE-MERWARA FOR 1884-85.

No. 2573S., dated the 10th September 1885.

From—The Secretary to the Chief Commissioner of Ajmere,

To—The Secretary to the Government of India, Home Department.

I am directed to submit the Annual Report of Forest Administration in Ajmere and Merwara for the year 1884-85, accompanied by a copy of the Resolution passed thereon by the Chief Commissioner.

Extract from the Proceedings of the Chief Commissioner of Ajmere in the Public Works Department, No. 2572A.S., dated 10th September 1885.

READ—

The Progress Report of Forest Administration in Ajmere and Merwara for the year 1884-85, by Mr. A. E. Lowrie, Assistant Conservator of Forests, together with Notes thereon by the Assistant Commissioners of the respective districts, received under cover of the Commissioner's letter No. 101F., dated 29th July 1885.

Area of the Reserves.

RESOLUTION.—The area reserved has, during the year under review, been increased from about 140 to 145 square miles, and the number of reserves from 17 to 18, the reserve added being the Makarwali Hokran tract in the Ajmere District, of an area of 3,000 acres.

In reviewing the Report for 1883-84, the Government of India remarked that the total estimated area likely to be ultimately reserved, *viz.*, 150 square miles, being only about 5 per cent. of the area of the two districts, would not be sufficient for the requirements of the people. On this point the Settlement Officer has explained that "the total khalsa area is 1,250 square miles, so that of the whole area amounting to 2,660 square miles, the balance of 1,410 square miles is either jaghir or istimrar," that "but little jaghir land and still less istimrar has been included in the reserves, so that it would be fairer to say that of the total khalsa area some 10 per cent. is under reservation." The actual percentage for Merwara appears, however, to be about 17, and that for Ajmere a little above 5·5. Proposals have, however, been matured for bringing the areas noted in the margin under village reserves, and await only the passing of the Regulation now before the Government of India in the Foreign Department.

	Acres.
Ajmere ...	21,000
Merwara ...	12,000

Boundaries of the Reserves.

Boundary pillars and fences requisite for the demarcation and protection of the newly acquired tracts have been pushed forward satisfactorily, and those for the old reserves maintained in repair. It is proposed in future to induce the villagers to do all work of the kind on payment.

Surveys.

Surveys of the tracts taken up having been completed during the year, the Survey Department has now in hand the preparation of the necessary skeleton maps.

Record of rights in Forest reserves.

The preparation of this important record is stated to have been finished during the year.

Protection of Forests.

Breaches of forest rules numbered 90, as compared with 67 for the previous year. There was an increase of 557 also in the number of cattle impounded for trespass on forest ground. Taking the districts separately as regards cattle trespass, Merwara shows an improvement, the number of cattle impounded having during the year fallen to 1,903 from 2,343 in the year 1883-84. In the Ajmere District the number of cattle impounded increased from 1,295 to 2,297. This unsatisfactory result is attributed to the scarcity of fodder which prevailed outside the reserves, owing to the partial failure of the rains in Ajmere during the preceding season.

Protection from fire.

An area of 11,242 acres escaped fire without the adoption of special measures for its protection. Of the remaining area of 80,938 acres, 47 acres represent a failure of the measures taken. The balance, or an area of 80,891 acres, was protected at a cost of Rs. 660-15-5, or about 1·5 per acre protected. Of the area of 47 acres burnt, 2 acres only have been traced to the misconduct of villagers. The origin of a fire which burnt 15 acres has not been discovered, and the carelessness of a Forester is responsible for the remaining 30 acres.

Grazing.

The Ajmere reserves were thrown open to grazing for the first time, and 494 head of cattle belonging to right holders were admitted into the reserves when it was found absolutely necessary to do so. In the Beawur sub-Collectorate of Merwara the number of cattle admitted into the reserves for grazing purposes was 8,030 as against 909 in 1883-84, while in the Todgarh sub-Collectorate or upper Merwara, where the rains of the preceding season had been plentiful, there was little variation. The total number of cattle allowed to graze in forest reserves amounted to 13,086, as contrasted with 5,279 during the year 1883-84; the grazing dues realized being respectively Rs. 1,985 and 850.

A new feature has been introduced in this measure, in so far that in Merwara grazing was allowed for the first time to cattle, the owners of which hold no rights in the tracts.

It is estimated under the passes issued to right holders for cutting grass, that 2,10,000 bundles were removed from the Ajmere reserves and 5,30,000 bundles from those in Merwara.

Ensilage.

Silo experiments were made at Ajmere and in the Dilwara Bir, near Beawur. Of the latter the Assistant Commissioner speaks encouragingly, and further trials may lead to this form of fodder becoming somewhat popular.

Artificial reproduction.

The year under review was favourable to plantation work and full advantage of it appears to have been taken. An interesting experiment was started in the newly acquired sandy tract of Makarwali Hokran. It consisted of planting the sandy hills with *munj* grass, in order to create cover for the seedlings from the seeds to be dibbled in at the grass roots.

Coppice experiments were continued, and the growth of shoots in cases other than that of Dhaukra has been noted to have been from 2 to 3 feet during the year.

Several exotics have been under trial with no unequivocal signs of success. Some *Eucalyptus viminalis* plants are stated to be doing very well in the Pushkar Nursery not far from Ajmere.

Experiments.

The results of the experiments undertaken during the year under review, regarding the effects of protection on temperature, water-supply, &c., have been given in Appendices B and C of the Assistant Conservator's Report. It would be premature to draw any conclusions from these for a single year.

Financial results.

The financial results of the year compared with those of 1883-84 were as follows:—

Year.	Receipts.	Charges.	Deficit.
	Rs.	Rs.	Rs.
1883-84	8,198	14,574	6,376
1884-85	10,456	16,316	5,860
Increase or decrease in 1884-85.	2,258	1,742	— 516

The revenue has increased by about 28 per cent. Nearly half of this increase was produced by the higher grazing dues realized during the year. Nearly 50 per cent. of the entire revenue was obtained from grass and grazing. Twenty-five acres of standing jungle were sold at an average price of Rs. 18 per acre, the highest price realized per acre being Rs. 33-5 in the Nagpahar Reserve, and the lowest Rs. 7-8 in the Mohwa Bir, which apparently has as yet a very poor growth. The supply of firewood and charcoal undertaken departmentally yielded a profit of Rs. 525, after meeting all charges. The area which contributed to this profit has not been shown, but it appears to have been about 40 acres. If so, the profit has been at the rate of about Rs. 12 per acre.

General Remarks.

On the whole very satisfactory progress is described in the Report, which, though it enters into many more details than are required to illustrate the work of the year, is full of interest.

ORDER.—Ordered, that a copy of this Resolution, together with the Report in original, be submitted to the Government of India in the Home Department, under cover of a separate letter.

Note by Assistant Commissioner, Ajmere, on the Annual Progress Report of Forest Administration in Ajmere-Merwara, during 1884-85; dated the 24th July 1885.

Area and boundaries.

The Makarwali-Hokran tract, comprising an area of about 3,000 acres, was added to the tracts under conservation in the Ajmere District, and the total area now stands at 92,180 acres. Pucca boundary pillars were erected round the Rajgarh and Makarwali-Hokran tracts; a few more pillars are still required and will be put up during the current year. 10,030 running feet of fencing were repaired and 19,015 running feet were constructed at a total cost of Rs. 524. The Report does not show what portions of the tracts still remain unfenced, but it is presumed that almost all our reserves are well protected by fencing in places subject to the trespass of cattle.

Prosecutions.

Of the 33 cases brought to trial, 30 cases were for unauthorized felling or appropriation of wood and minor produce, and 3 for grazing without permission. Of these convictions in 30 cases involving 77 persons were obtained. 3 complaints involving 9 persons were dismissed.

Cattle impounded.

The large increase in the cattle impounded from the Government reserves in the Ajmere District is attributed to the scarcity of fodder and to the opening of the blocks for grazing at a much later date than usual, when in fact it was found absolutely necessary to do so. This is unsatisfactory and should be provided against in future.

Fire protection.

With the exception of the Srinagar tract, all the Government reserves in Ajmere remained free from fires. In Srinagar an area of 30 acres took fire accidentally in the course of burning grass to prepare some land for sowing. The damage, however, was confined only to some grass. Two additional fire lines were burnt during the year in the Rajgarh tract. The cost of fire-protection amounted to Rs. 124.

Grazing.

It is satisfactory to note here that 494 cattle of right holders were allowed to graze for the first time in the Ajmere Reserves owing to scarcity of fodder, and 4,841 grass permits were issued for six weeks, from the middle of October to the end of November as usual. The grass removed by cutting was estimated at about 21,000 bundles. This afforded much relief to the villagers, and I should be glad to see the system extended.

Ensilage.

Silo experiments were made only in one place, *viz.*, in the Ajmere Nursery. The results were not satisfactory. The fodder removed from the *silo* was found to be more or less fœtid, and cattle could only with difficulty be got to eat it. The system in my opinion will never be popular with the zamindars.

Artificial reproduction.

The results reported under this head are very satisfactory. No planting appears to have been made as yet on the bunds built across valleys and ravines, as the silt desposit brought down by the flood is reported to be small.

Financial results.

The total Forest Revenue of the Ajmere District amounted to Rs. 4,415 during 1884-85, the main sources of income being firewood and grass. The total Expenditure amounted to Rs. 10,320, of which Rs. 2,858 were spent on conservancy and works, and Rs. 7,462 on establishments, leaving a deficit of Rs. 5,905. The establishment charges include the larger amount of Rs. 4,100 on account of pay and travelling allowance of the Assistant Conservator of Forests, half of which should fairly be debited to Merwara as a matter of account.

Note by Assistant Commissioner, Merwara, on the Annual Progress Report of Forest Administration in Ajmere-Merwara during 1884-1885; dated the 13th July 1885.

Area and Boundaries.

The area under conservation in Merwara remained unchanged. The demarcation of the newly acquired tracts has progressed satisfactorily. As regards fencing, 6,950 running feet of new stone-walling were completed in the Merwara forests. The proposal of the Assistant Conservator, to give the contracts for the construction of stone-walling, in future, to villagers interested in the lands enclosed, is a good one, and I trust the villagers will have the good sense to avail themselves of the chance offered.

Establishment.

Posts in the Forest Department are considerably sought after by our village school lads. I have no doubt we shall be able to supply the Assistant Conservator with candidates whenever vacancies in the establishment occur.

Magisterial work in Forest cases.

The number of cases in Merwara for trial by Magistrates was 15, as against 10 last year, showing an increase of 5. Out of the total number of cases convictions were obtained in 13, affecting 31 persons.

Cattle impounded.

The Report shows a decrease of 445 head in the number of cattle impounded in the Merwara jungles, as compared with last year. This is satisfactory. As fencing is proceeded with, it is to be hoped the number of impounded cattle will diminish rapidly, and thereby one of the chief causes of irritation on the part of the villagers allayed. The Report does not show what proportion of the cattle seized was found in the newly acquired tracts.

Fire Protection.

The year under report was somewhat unfortunate as regards fire protection: 15 acres in the Sheopura Block were burnt; origin of fire not known. There was also a fire in the Amner Block which luckily was quickly got under: 5½ miles of additional fire lines were constructed.

Grazing.

Owing to the failure of the grass crop of 1883, it was found necessary to throw open the whole of the Merwara tracts until the rains set in. The aid thus afforded to the cattle of the district must have been very great; 12,592 cattle were allowed to graze, as compared with 5,279 in the previous year; in addition to this, the Assistant Conservator calculates that above 530,000 bundles of grass were cut out of the Merwara jungles during the year.

Ensilage.

I had a silo made in the Dilwara Bir of as simple a form as possible. It was stored with grass in August and opened in May. The contents were found to be good, and were readily eaten by cattle. The villagers, however, I regret to say, remained sceptical. Further experiments may perhaps remove their prejudices.

Financial Results.

The Assistant Conservator must be congratulated on having reduced the Deficit by Rs. 516. The increase in the Receipts of over Rs. 2,000 must perhaps be partly attributed to the large increase in grazing dues. The total Revenue in the Merwara sub-division increased from Rs. 3,499-13-5 in 1883-84 to Rs 6,041-2-8 during the year under report, while the Expenditure shows only an increase of above Rs. 400 roughly.

I visited nearly all the Merwara blocks during my cold weather tour, accompanied by Forest Ranger Sahib Roy. I would fully endorse the Assistant Conservator's favourable mention of that officer.

Progress Report of Forest Administration in Ajmere-Merwara for the year 1884-85, by A. E. Lowrie, Esq., Assistant Conservator of Forests.

INTRODUCTION.

No change was made in the divisional working during the year.

2. The work through district officers was continued and has answered admirably.

3. During the year I was deputed to inspect the forests of Jodhpur, my services being made available from the 15th November to the 15th December; the inspection embraced the whole of the western slopes of the Aravallis as far as they lie within Jodhpur territory. The forests are deserving of special attention, and it is hoped that measures will shortly be taken for their conservation. A report was sent in about the works to be carried out and measures to be taken for their conservation.

CHAPTER I.

AREA AND BOUNDARIES.

4. During the year the Makarwali-Hokran tract, an area of about 3,000 acres, was added to the Ajmere Sub-Division. The total area now stands at 92,180 acres, as shown in Form No. 49. It was found on a closer inspection that the Bakula tract in Merwara could not be taken up as a forest reserve, owing to three small hamlets within it,—these could not very well be removed: so that it is proposed to deal with the tract as a village reserve.

5. The village reserves were demarcated during the year, sanction only being awaited for finally taking them up. The areas at present taken up are limited, in all to an area of 33,000 acres both in Ajmere and Merwara, but it is hoped that these areas will be largely increased when the villagers begin to realize the utility of the measures taken.

6. The disputed boundary between the Meywar border and Merwara, pending for some years, was settled in favour of the Meywar Durbar; this will slightly reduce the area of the Biliawas tract. The area will be noted, on receipt of the survey maps, in next year's Report.

7. The boundary pillars round the new blocks of Rajgarh and Makarwali-Hokran were permanently erected and numbered, at a cost of Rs. 49-6-0, in Rajgarh 163 pillars, in Makarwali 54 pillars, leaving a few more pillars to be put round the Makarwali tract which will be taken up during the rains of 1885-86. The work had to be stopped owing to the difficulty of bringing stones over the heavy sand in this part of the tract. In Merwara the Benjari, Mandlan, Siliheri and Amner Blocks were demarcated permanently with 188, 14 and 151 pillars respectively; all pillars have been whitewashed and numbered. It is hoped shortly to finish the demarcation of the Sheopura extension with permanently erected pillars. The boundary pillars of the old blocks were all looked to and found in fair order.

8. The work of demarcating permanent patches of cultivation within forest limits has been taken in hand.

9. 13,440 running feet of "*Euphorbia*" fence were repaired during the year. Of this 10,030 feet were repaired in Ajmere, and 3,410 feet in Merwara; 600 running feet of stone-walling were repaired in the Chang Block. Besides these repairs 2,510 running feet of ditch and earthen bund were made along the sandy portion of the Makarwali Block, and 23,425 running feet of stone-walling were newly constructed along the boundaries of various tracts. The following table shows the amount of fencing done during the year.

Name of tract.	Repairs.		New.	
	Euphorbia.	Stone.	Earthen mound.	Stone.
	R. ft.	R. ft.	R. ft.	R. ft.
Mohwa Bir and Madar Hill	5,417	...	...	...
Rajaosi	2,642	...	...	...
Danta	619	...	...	...
Srinagar	408	...	...	...
Nagpahar	944	...	...	...
Rajgarh, ...	...	...	...	16,475
Makarwali Hokran	...	...	2,540	...
Chang Bir	3,410	...	...	...
Chang tract	...	600	...	...
Todgarh	...	...	...	350
Borwar Kotra	...	...	...	500
Dewair	...	...	...	2,000
Banjari Mandlan	...	...	...	3,000
Anspahar	...	...	...	500
Biliawas	...	...	...	600
Total ...	13,440	600	2,540	23,425

The total expenditure on fencing during the year was Rs. 687-2-4 (Ajmere Rs. 524-5-7 and Merwara Rs. 162-12-9). The stone-walling was done entirely on contract, at a rate of Rs. 2-8-0 per 100′ × 2½′ × 2′ in Ajmere, and Rs. 2 in Merwara. In all cases where it could be done, the contract was given to villagers to whom the area being fenced belonged. It is hoped to get all works done by villagers who have an interest in the land taken up; so as to enable all monies spent to go into their pockets, rather than to outsiders.

CHAPTER II.

Surveys, Working Plans and Annual plans of Operations.

Surveys.

10. The surveys of all Forest blocks both in Ajmere and Merwara were finished during the year, but the skeleton maps have not yet been received from the Survey Department; they are expected shortly. Judging from some of the rough plottings sent me, they are everything that could be wanted, and will be very useful.

Annual Plans of Operations.

11. Plans of operations were drawn up for the Ajmere and Merwara Sub-Divisions. In Appendix A will be found a Statement showing to what extent the proposed operations were carried out.

Record of Reserves.

12. The preparation of these records is almost finished for all the forest blocks, and it is hoped to get them ready early during the coming season.

CHAPTER III.

(1) Protection and Improvement.

Establishment.

13. One extra guard was entertained for the Makarwali-Hokran tract, and one at Rajgarh.

14. In accordance with last year's Report five young men educated at the local schools were employed as forest-guards—two of them have since been raised to the post of foresters.

15. One young man was sent during the year to the Dehra Dun Forest school for training as a Forest Ranger. From the reports of the Director he has shown himself zealous and is working well.

The post of a clerk on Rs. 70 in the Commissioner's office was abolished during the year.

(2) General protection and breaches of Forest Law.

Prosecutions.

16. The number of cases tried by Magistrates was 17 in excess of last year. The results of the prosecutions were as follows :—

Year.	Convictions.		Acquittals.	
	Cases.	Persons.	Cases.	Persons.
	Rs.	Rs.	Rs.	Rs.
1883-84	28	60	3	12
1884-85	43	108	5	21
Increase in 1884-85 ...	15	48	2	9

Full particulars of the nature of the cases are given in Form No. 52. All cases were of a petty nature.

Cases compounded.

17. There were 48 cases involving 123 persons compounded by the Assistant Conservator in Ajmere and Merwara. Besides these 5 cases involving 5 men were discharged for want of proof. The cases were for petty offences, chiefly for illicit felling. The amount realized by compensation amounted to Rs. 78-4.

18. The number of cattle impounded during the year was 557 head in excess of last year. The following table gives the results for Ajmere and Merwara :—

District.	Cattle impounded.	
	1883-84.	1884-85.
Ajmere	1,295	2,297
Merwara	2,318	1,903
Total ...	3,613	4,200

The large increase in Ajmere of 1,002 head, made up chiefly of goats and sheep, is due solely to the fact that, owing to the very bad rains of 1883, fodder was very scarce right through the hot weather, and as it was not considered safe to open the blocks until there was really no help for it, the areas being so very small, and it was just possible that the monsoons might have kept off. Cattle were, in very many cases, purposely allowed to stray into the forest. The results in Merwara are very much more satisfactory, as the blocks were opened early in the season.

19. The fines from cattle impounded and credited to "Forests" amounted to Rs. 357, against Rs. 308-12 realized last year.

(3) Forest fires.

20. The year has not been so favourable for fire protection as last year. 47½ acres were brunt—30 acres in the Srinagar Block, through the carelessness of the Forester, who in burning a small patch of 5 acres for sowing allowed the fire to spread. Prompt measures were taken and the fire extinguished before it could do much damage; fortunately nearly the whole of the area burnt is grass land. 15 acres were burnt in the Sheopura Block—the origin of this fire could not be traced. The third fire broke out in the new Amner Block; it was promptly extinguished. This fire was caused through the carelessness of some villagers smoking while cutting grass; the offenders could not be traced. The total expenditure on fire protection during the year was Rs. 617, of which Rs. 124 or 1·27 pies per acre were spent in Ajmere, and Rs. 493 or 1·28 pies per acre in Merwara. The following additional lines were burnt in Ajmere and Merwara.

Ajmere.—Three miles along the Ajmere-Nasirabad road, and 1 mile across the Rajgath tract.

Merwara.—Five miles along the Dabgabra Chipidevi road, and ½ mile along the Meywar border of the Amner tract. With reference to Government of India, Home Department (Forests), Circular No. 4F., dated 14th April 1885, I

would state that 11,242 acres escaped forest fires without the adoption of special measures for their protection.

(4) Grazing and fodder grass.

21. Owing to the very short monsoons of 1883 and the scarcity of fodder, the whole of the Merwara tracts were thrown open to grazing. In Ajmere too wherever the villagers applied for grazing, grazing was allowed them till the rains set in; by this means very many cattle that would otherwise have perished for want of food were saved.

22. The following table shows the number of cattle allowed to graze, as compared with last year:—

Name of Tahsil.	1883.	1884.	
		Right-holders.	Outsiders.
Ajmere	...	494	...
Beawar	909	7,732	298
Todgarh	4,370	4,163	399
Total ...	5,279	12,389	697

23. The forest blocks in Merwara were thrown open not only to right-holders, but also to villagers in the District who had no rights within the forest. The total amount realised for grazing was Rs. 1,985, as compared with Rs. 850 realised last year.

24. The grass as usual was cut freely by the villagers of Ajmere and Merwara. 4,841 grass permits were given for six weeks, from the 15th October to the end of November, to the villagers of Ajmere; while in Merwara, where grass is more plentiful, the villagers were allowed to cut for 5 months—from November to March. Endeavours were made to estimate the number of bundles removed from the forest during the time of cutting, and it was found that about 2,10,000 bundles were removed from Ajmere and 5,30,000 bundles from Merwara.

25. A silo of 15 feet by 8 feet was constructed in the Ajmere Nursery. The fodder was stored in a pit dug in the ground, and earth put over it. Chopped Charri was stored in August, and the silo opened in March. On the silo being opened, the headmen of villages round about Ajmere were asked to attend. The gathering was large and very conservative; so that nothing could convince them of the utility of the measures adopted. It is hoped that further trials will be better appreciated by them. The contents of the silo were good and cattle ate it.

26. Other silos were also constructed in the Merwara District under the supervision of the Assistant Commissioner. The results were practically the same as those obtained for the Ajmere Nursery.

(5) Natural Reproduction.

27. Nothing further can be said under this head than was noted last year.

28. In order to kill the porcupines which are yearly destroying hundreds of trees, especially *nim*, rewards were offered for each head brought in. By this means in one block alone 65 porcupines were killed.

(6) Artificial Reproduction.

29. *Sowings.*—The sowings were more successful during the year. Seeds of *Arinja* (*Acacia leucophlœa*), *Nim* and *Khejra* were dibbled in under *Euphorbia* bushes, in experimental areas in the Danta, Mohwa Bir, and Taragarh Blocks. The results have been fairly successful with *Arinja* and *Nim*. *Khejra* does not appreciate the friendly shade of the *Euphorbia*.

30. In the Makarwali-Hokran tract, the reclaiming of the sandy hills was taken in hand. A small experimental area was planted up with *Munj* grass, and *Arinja* and *Arna* (*Ailanthus excelsa*) seed dibbled in at the roots. The *Arinja* seed germinated very freely, and when visited in March, the young seedlings were doing very well; the *Arna* did not germinate. The experiment is a promising one, and will be continued on a large scale as funds are available.

31. In Merwara seeds of *Pongamia glabra*, *rohira*, *siris*, *babul*, and *khair* were sown in small areas in the Biliawas, Kotra, Todgarh and Benjari Blocks; the germination was very good, but owing to severe frosts only 20 per cent. of the sowings have survived, and these do not look healthy.

32. *Planting.*—586 *sisoo*, 140 *safed siris* (*Albizzia procera*) and 12 *bamboos* were put out in the Danta Block; the results have been very encouraging. Of *sissoo* only 10 plants have died, *safed siris* 20 plants, and *bamboos* none. The planting was carried on along the banks of the very many dry nalas that run through this block. No plant under 2 feet high was put out.

33. In the Makarwali tract in the sand drifts, 120 seedlings of *arna* were put out; 60 are alive. From the results noted transplants over 1½ feet high of this tree are more satisfactory than the sowing of seed.

34. 1,000 *Saler* cuttings in the Kotra, and 500 in the Mohwa Bir Blocks were put out during the rains; only 20 per cent. are alive. 300 *Tamarix* cuttings were put out in the Srinagar Block; only 20 per cent. have survived.

35. 150 mangoes were planted out in the Makarwali, Taragarh and Danta Blocks; 100 are doing very well.

36. 500 Sandal seedlings were put out in the Mohwa Bir Block, and 50 in the Danta Block; 20 per cent. are alive. Unfortunately the seedlings were put out rather late in the rains, which caused a number of the young plants to die. Nurseries for raising sandal have been made in the Mohwa Bir, Srinagar and Rajgarh Blocks. The seed has germinated very freely, and the young plants are looking well.

37. The total cost on sowing and planting was Rs. 423.

38. The coppicing experiment was continued in the Mohwa Bir and Nag Pahar Blocks. Areas of 10 acres each were cut from May to June, just before the rains set in. Judging from the results of last year, these months are the best for cutting in this district. In all cases except Dhaukra, which is a very slow grower, mentioned last year, the growth of coppice shoots has been from two to three feet during the year, the average height being—

	Feet.
Khejra	6½
Arinja	5½
Dasan	5
Babul	5½
Khair	4
Saler	5½
Kumpta	4
Dhaukra	3½

39. The Ajmere and Beawar Nurseries were maintained during the year as hitherto. The making over of the Pohkar garden to "Forests" was under discussion; it has since been made over. For the supply of seedlings to the

Srinagar range a small garden below the Bir tank bund was made over to "Forests." The site is well suited for a small nursery.

40. During the year the following trees were given *gratis* from the nurseries. :—

Householders	1,090
Roads and public gardens	1,298
Forest tracts	2,110
Total ...	4,498

Besides the trees distributed there are 9,750 plants in the Ajmere Nursery and 8,902 in Beawar, as detailed below :—

Name of plants.	Ajmere including Pushkar.	Beawar including Dilwara Bir.
Nim	1,000	...
Nim Chameli...	120	...
Tamarind	1,120	...
Siris	1,580	1,624
Charal	1,500	3,846
Arjan	120	...
Shisham	1,700	...
Dhaukra	100	...
Arna	180	...
Bamboos	140	1,954
Siris, safed	360	...
Mangoes	680	...
Guavas	460	...
Sweet Limes	125	...
Bahera	...	435
Indian elm	...	249
Miscellaneous...	565	794.
Total ...	9,750	8,902

41. The old Ajmere Nursery on the Beawar road was not disposed of during the year. Arrangements have since been made to sell it for the construction of a Sudder Distillery.

(7) Experiments and Exotics.

42. Twenty seedlings of *Pterocarpus Marsupium* raised in the Pushkar Nursery were planted out in the Danta Block. Of these 8 are alive and doing well. 45 *Grevillea robusta* were put out in the Danta Block during the rains, and though they have not grown, all are alive. It is hoped they will spring up during the coming rains.

43. A few plants of *Eucalyptus viminalis* were transplanted into the Makarwali-Hokran tract; all these seedlings died during March. Those in the Pushkar Nursery are doing very well.

44. Fifteen cocoanut seedlings were planted in the Bir and Pushkar nurseries; 4 plants died, the rest are doing well.

45. Fifty-five fruit trees were received from the Saharanpur and Bombay gardens, and planted in the Bir Nursery; 6 died, the rest are making progress. Of those planted in the Beawar Nursery the oranges are the only ones alive; these also have not made much progress.

(8) Communications and Buildings.

A. Roads and Bridges.

46. No new roads were made during the year. 3 miles of road were repaired to the top of Nag Pahar at a total cost of Rs. 21-11-0. Six miles of road through the Chang forest tract were repaired and widened at a cost of Rs. 70-11-3. In Todgarh 4 miles of road from Chipidevi to Kachbali were widened at a cost of Rs. 17-12-0.

B. Buildings.

47. Two new chaukis were built at a cost of Rs. 170-11-9, one in the Makarwali-Hokran Block, the other at Kothaj in the Rajgarh Block. The following forest buildings were repaired—

	Rs.	A.	P.
Bir bungalow and Forest Chauki	9	10	0
Bir garden, Mali's hut	16	0	0
Mohwa Bir, Rajaosi, and Taragarh Forest Chaukis	5	5	0
Ranger's hut, Merwara	12	13	0
Total	43	12	0

CHAPTER IV.

48. The following were the experiments carried out during the year.

A. Observations of Rainfall.

Besides one station in the Ajmere Nursery and one on the bund of the Anasagar tank, both out of Forests, there were three sets of stations in the Mohwa Bir, Madar Pahar and Nag Pahar Blocks; one gauge being inside and

the other outside the forests. The condition of the stations is as uniform as possible. The results gathered are given in the following table:—

Months.	Mohwa Bir Area of Forest 1,962 acres.		Madar Hill. Area of Forest 850 acres.		Nag Pahar. Area of Forest 2,660 acres.		Bajrangarh over the Anasagar bund.	Remarks.
	In Forest.	Out of Forest	In Forest.	Out of Forest.	In Forest.	Out of Forest.		
	I. C.	I. C.	I. C.	I. C.	I. C.	I. C.	I. C.	
June 1884 ..	4 42	3 75	2 45	2 54	...	...	2 27	The stations were only erected in June, so that this does not show the total rainfall for the year, as rain fell in January, February, March and May In Mohwa Bir the distance between stations is 1,232 feet. In Madar Hill distance between stations 2,161 feet, and in Nag Pahar distance between stations 9,195 feet.
July ..	7 83	7 0	4 75	4 52	5 0	4 12	6 24	
August ..	4 36	4 14	6 67	6 68	4 58	4 72	3 82	
September ..	10 87	10 10	12 17	12 34	9 67	7 53	9 96	
October ..	0 2	0 2	...	...	...	..	0 11	
November ...	0 22	0 25	0 22	0 19	0 8	0 11	0 20	
December ...		..	0 2	0 3	...	...	...	
Total ..	27 72	25 26	26 28	26 30	19 33	16 48	22 60	

It would be very hasty to draw any conclusions from these first results; yet it must be noticed that both in the Mohwa Bir and Nag Pahar tracts the differences go as high as 2″·46 and 2″·85 respectively, while for the Madar Pahar the decrease is only ·02 inch in forest. All the stations are easily accessible and all readings were taken at the Assistant Conservator's Office, two bottles for catching the rain being given to the Forest guards for each gauge.

49. Sites for three other sets of raingauge stations have been selected, one in Merwara close to the Forest Ranger's head-quarters, and two in Ajmere.

B. Observations of temperature and Humidity.

50. Two grass sheds, as a preliminary step, were erected in the Ajmere Nursery, one under trees the other out in the open. Cages with necessary instruments were fixed at a height of 4 feet from the ground in both cases. Beginning from July the results have regularly been recorded at 10 A.M. and 4 P.M. The results are given in Appendix B. The results short as they have been are most interesting, showing that there was an average of over 1° difference in the state of the air under trees in the open during the day, while at nights there was less than 1° difference in the air.

As regards aqueous vapour, the experiments show very little difference, the air outside being very slightly more charged with moisture than under trees. The difference decreases from 10 A.M. to 4 P.M. Regarding relative humidity, it appears that the air is drier outside than under trees, due no doubt to the decrease of temperature.

51. Two stations, one inside, one outside the forest, have been selected in the Mohwa Bir tract, where it is proposed to erect sheds of the standard Dehra Dun pattern. These have been received and will shortly be put up In future all these observations will be conducted under the Meteorological Reporter to the Government of India, who has kindly offered to give us suggestions about them.

C. Experiments to determine the water level in wells.

52. During the year only three wells were experimented on. They are all situated within the Mohwa Bir Forest Block; and are one above the other up the same nala. With the exception of villagers who drink at these wells now and again, no water is removed. The measurements are taken with a metallic tape attached to a floating block of wood, which is let over a plank fixed to a *chabutra* at the top of the well and projecting to very near its centre. The results are given in Appendix C.

53. Eight other wells have been started both in and out of the forest. The results will be given in next year's Report.

D. PROTECTION OF THE CATCHMENT AREA OF TANKS.

54. This experiment cannot be carried further than has already been done, owing to there being no possibility of conserving more land for forest purposes. The larger tanks of the district for which figures of storage are obtainable, Anasagar, Bir, and Rajaosi, are the only ones whose catchment has partly been conserved.

55. Only in one case, the Danta tank, has the catchment been entirely conserved. The tank is by no means a small one, with an exceedingly promising catchment area for the growth of forests; so that the results now being recorded for this tank will, in a few years, be most valuable. It is much too early to arrive at any conclusions. The results of the last five years, which have only been sufficient to raise a good crop of grass with numerous seedlings 2′ to 3′ high over the area, are given by the Assistant Engineer, Nasirabad, Military Works and Roads Division, but owing to their not being complete in detail they will be given in next year's Report.

E. CONSTRUCTION OF DAMS ACROSS VALLEYS.

56. This work has been taken up in the Danta Reserve; 7 bunds were constructed across the Munjwala nala. It is early to note any great results at present; the silt deposit brought down last rains was small. The work will be continued as funds are available.

CHAPTER V.

YIELD AND WORKING.

(1) DEPARTMENTAL OPERATIONS.

57. Endeavours were made to induce contractors to take up marked areas for felling, but the results were not successful, the consequence being that work had to be taken up departmentally. There are hopes, however, that this difficulty will gradually be got over.

58. The quantity of firewood and charcoal removed during the year was as follows:—

			Mds.	C. ft.
Firewood (compound coppice)	...	...	2,561	6,591
Charcoal ditto	...	...	...	1,329

as compared with 5,000 cubic feet of firewood and 160 maunds of charcoal removed last year. The firewood was cut from the Chang and Borwar Blocks, while the charcoal was made entirely in the Bagri Block, Todgarh Range. Of the 6,591 cubic feet of firewood, 3,400 cubic feet were supplied to the Rajputana-Malwa Railway and 2,691 cubic feet to a local contractor, and the rest used for departmental purposes.

The total Receipts from firewood were Rs. 496-4-6, against an Expenditure of Rs. 251-3-6.

The charcoal was supplied entirely to the Rajputana Malwa Railway, which indented for 104½ tons. Of this 1,128 maunds were supplied during the year at a cost of Rs. 551, the Receipts being Rs. 831.

59. The following shows the work done and cost of Government bullocks and buffaloes during the year—

Place.	Description of work.	No. at beginning of year.	No. at close of year.	Cost of feed and keep.	Remarks.
				Rs. A. P.	
Ajmefe Nursery	Watering.	4 bullocks	4 bullocks	25 7 4	
Taragarh	"	1 buffalo	1 buffalo	...	
Beawar Nursery	"	3 bullocks and 1 buffalo.	3 bullocks	8 15 0	Buffalo sold.
Total	..	9	8	34 6 4	

(2) REMOVAL OF PRODUCE BY PURCHASERS.

60. Areas of 10 acres each adjoining those cut last year in the Nag Pahar and Mohwa Bir Blocks were sold standing to purchasers under conditions similar to those in force last year. The amounts realized were—Nag Pahar Rs. 335, and Mohwa Bir Rs. 78.

In Merwara Chang Block, 5 acres were sold standing to purchasers for Rs. 50; but owing to the difficulty experienced by the Contractor in getting labour, he was only able to remove two-thirds of the produce.

61. Dry firewood was sold from the forest blocks both in Ajmere and Merwara. In Ajmere the sales were by auction, while in Merwara tickets were given for head and donkey loads. The following table shows the results of these transactions—

Name of tract.	No. of loads.		Amount.
	Head.	Donkey.	
			Rs. A. P.
Mohwa Bir and Madar Hill	By auction.		137 14 0
Taragarh valleys	"	"	38 12 0
Nag Pahar	"	"	19 9 0
Srinagar	"	"	56 8 0
Danta	"	"	58 0 0
Rajaosi	"	"	42 8 0
Shikast Masjid	"	"	5 14 0
Bir garden	"	"	1 2 0
Ajmere Nursery	"	"	18 0 0
Chang tract	4,663	484 6 camels	398 11 3
Todgarh	...	5,967	619 13 9
Biliawas	...	5 carts	5 0 0
Dewair	By auction.		0 9 6
Borwar Kotra	...	723	135 14 6
Dilwara Bir	By auction.		3 12 0
Sheopura	813	395	142 8 6
Total ...	...	...	1,684 8 6

In Merwara, owing to there being no dry wood left in the Borwar and Chang Blocks, these areas have been closed, and the following plan tried, but was not found successful. One acre was selected for the cutting of green wood by the villagers; but as they could not get a ready sale for green firewood in the Beawar city, the men dropped coming.

62. Wood for household purposes was sold to villagers of the district who have no rights in forest tracts. 3,000 dandas, 21 ballis, 24 loads and 140 kamris (twigs) were disposed of in this way. The sum realized was Rs. 83. The charges are very nominal, and every endeavour is being made to encourage these sales.

63. 5,010 Bamboos were sold from the Todgarh Range.

64. Bamboos are beginning to make a very good show in the Todgarh and Dewair Ranges. It is expected that the revenue from this source will steadily increase.

65. *Grass and grazing.*—Under this head the total revenue for Ajmere was Rs. 2,894, and for Merwara Rs. 2,373. The grass from that portion of the Nag Pahar, Mohwa Bir and Chang Bir Blocks, which was not subject to rights, was sold by auction for Rs. 1,400, Rs. 731 and Rs. 48 respectively. Stacked grass from the Ajmere and Merwara Sub-Divisions was sold by auction and realized Rs. 705 and Rs. 69 respectively.

Minor Produce.—The sales of minor forest produce amounted to Rs. 399-11-1 in Ajmere and Rs. 70-12-3 in Merwara. In Merwara the sum realized was chiefly by the sale of wax and honey, while in Ajmere Rs. 155-7-1 were for miscellaneous sales from the Ajmere nursery, and the balance for fruit sold from forest blocks.

66. *Refunds.*—The Railway authorities refunded Rs. 10-15-0 charged extra by them for a consignment of firewood sent to Ajmere.

67. The revenue from other sources amounted to Rs. 77-13-4.

---

(3) Free Grants.

68. *Wood.*—Free Grants were made to those villagers who have rights in the forest. The following statement gives the total quantity granted as compared with last year :—

	1883-84.	1884-85.
Jungle poles for household purposes	2,135	5,090
Plough and small wood for agriculture	18	954

69. *Grass.*—The villagers were allowed to cut grass freely both in Ajmere and Merwara. Nearly the whole of the grass from the Ajmere blocks was again sold by villagers, and in some cases even in Merwara.

The following Statement will give some idea of the value of these blocks to villagers in grass alone, ever since they have been conserved :—

District.	Bundles brought out from the forest.	Value.
		Rs.
Ajmere	2,10,000	13,125
Merwara	5,30,000	33,125
Total ...	7,40,000	46,250

The figures for the number of bundles in Ajmere is very nearly correct; for Merwara a fair approximation has been made. Regarding the value of the grass, the low sum of Re. 0-1-0 a bundle has been fixed.

CHAPTER VI.

FINANCIAL RESULTS.

70. The following table shows the results of the year, as compared with the results of the two previous years.

Budget Heads.		1882-83.	1883-84.	1884-85.
		Rs.	Rs.	Rs.
Receipts ...	... ...	7,126	8,198	10,456
Expenditure	A. Conservancy and Works	3,689	4,100	5,174
	B. Establishments ...	7,595	10,474	11,142
	Total Expenditure ...	11,284	14,574	16,316
	Deficit	4,158	6,376	5,860

71. The Receipts and Expenditure under the three main heads, as compared with last year, are as follows :—

Year.	I. TIMBER AND OTHER PRODUCE REMOVED BY GOVERNMENT AGENCY.		II. OTHER REVENUE.		III. FORMATION, PROTECTION AND IMPROVEMENT OF FORESTS.	TOTAL.	
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1883-84 ...	106	402	8,092	3,850	10,322	8,198	14,574
1884-85 ...	1,810	802	8,646	4,616	10,898	10,456	16,316

72. *Revenue.*—The Revenue exceeded that of the previous year by Rs. 2,258, and is accounted for chiefly as follows :—an increase of Rs. 1,741-1-1 for firewood and charcoal supplied departmentally, Rs. 61-2-3 for bamboos, Rs. 704-3-5 for grazing and fodder grass, Rs. 26-7-3 for fines and forfeitures, and Rs. 30-2-4 miscellaneous. Other sub-heads show a decrease of Rs. 304-12-8.

73. *Expenditure.*—The Expenditure exceeded that of the previous year by Rs. 1,741, which is accounted for as follows :—an increase of Rs. 400-0-3 under departmental work, Rs. 10-3-3 under produce removed by purchasers, Rs. 241-15-10 under communications and buildings, Rs. 654-5-10 under demarcation, plantations, protection from fire and other works. There is also an increase of Rs. 667-8-11 under establishments. As a set-off against this increase, there was a saving under the other heads amounting to Rs. 241-12-7.

74. The outstandings at the beginning of the year amounted to Rs. 482-8-0; at the close of the year they were *nil.*

CHAPTER VII.

GENERAL REMARKS.

75. The Forest Establishment worked well, and I would specially mention Forest Ranger Sahib Roy.

76. My Office Establishment did excellent work, notwithstanding the increase that has taken place since the experiments have been started. I trust that something may be done to increase the pay of the Forest Clerk, as recommended in my letter No. 364, dated the 10th January 1885.

Annual Form No. 49.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Reserved Forests, 1884-85.

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1884. Acres.	Area on 1st April 1884. Equivalent in square miles.	Added during the year. Acres.	Excluded or transferred to other heads. Acres.	Area on 31st March 1885. Acres.	Area on 31st March 1885. Equivalent in square miles.	No. and date of Notification of addition or transfer.	Remarks.
AJMERE-MERWARA ..	AJMERE ...	Mohwa Bir and Madar Hill ...	2,812	4	...	...	2,812	4		
		Nag Pahar ...	2,660	4	...	...	2,660	4		
		Taragarh Valleys ...	1,016	2	...	...	1,016	2		
		Srinagar and Bir ...	3,575	6	...	...	3,575	6		
		Rajaosi ...	1,260	2	...	...	1,260	2		
		Danta ...	1,244	2	...	...	1,244	2		
		Rajgarh ...	2,835	4	...	...	2,835	4		
		Makarwali Hokran ...	...	...	3,000	...	3,000	5	Chief Commissioner's Notification No. 1933S., dated 29th July 1884.	
		Total ...	15,452	24	3,000	...	18,452	29		
	MERWARA ...	Chang ...	2,341	4	...	...	2,341	4		
		Huttun and Sheopura ...	2,920	5	...	...	2,920	5		
		Biliawas and Taragarh ...	3,172	5	...	...	3,172	5		
		Todgarh and Barakhan ...	40,048	63	...	...	40,048	63		
		Dilwara and Chang Birs ...	235	...	...	...	235	...		
		Borwar Kotra ...	4,543	7	...	...	4,543	7		
		Anspahar ...	1,466	2	...	...	1,466	2		
		Dewair ...	12,203	19	...	...	12,203	19		
		Benjari Mandlan ...	4,500	7	...	...	4,500	7		
		Amner Kukra ...	2,300	4	...	...	2,300	4		
		Total ...	73,728	116	...	...	73,728	116		
		Grand Total ...	89,180	140	3,000	...	92,180	145		

Annual Form No. 50—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Plantations, 1884-85.

Division.	Name of Plantation.	On 1st April 1884.		Added during 1884-85.		On 31st March 1885.		Remarks.
		Area.	Cost.	Area.	Cost.	Total Area.	Total Cost.	
		Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	
AJMERE-MERWARA	*Out of the area taken up under the Regulation.*							
	Mohwa Bir and Madar Hill	53	7 966	4	59	57	8,025	
	Nag Pahar	18	8,576	.....	4	18	8.580	
	Taragarh Valleys	78	9,250	...	84	78	9,334	
	Srinagar Bir	6	1,031	.....	14	6	1,045	
	Danta	1	22	15	44	16	66	
	Rajgarh	.... .	... .	....	1	.....	1	
	Makarwali Hokran	.. ...	...	10	13	10	13	
	Total	156	26,845	29	219	185	27,064	
	Chang tract	15	1.703	.....	3	15	1,706	
	Huttun and Sheopura	30	1,505	.. ...	.....	30	1,505	
	Biliawas and Taragarh	12	987	.....	.....	12	987	
	Todgarh and Barakhan . ..	46	990	.....	...	46	990	
	Borwar and Kotra	2	33	5	18	7	51	
	Dilwara and Chang Bias	66	1,193	5	274	71	1,467	
	Benjari Mandlan	...	...	3	35	3	35	
	Total ...	171	6.411	13	330	184	6.741	
	Grand Total ...	327	33,256	42	549	369	33,805	
	Tracts not taken up under the Regulation.							
	Shikast Masjid	6	1.422	.....	62	6	1.484	
	Parade Plantation	8	1.727	.. ...	.....	8	1.727	
	Total	14	3.149	.....	62	14	3.211	
	Total Plantation ...	341	36 405	42	611	383	37.016	
	Nurseries.							
	Ajmere Nursery	10	5.802	.. .	470	10	6.272	
	Beawar Nursery	4	824	.....	262	4	1.086	
	Bir garden		.....	4	61	4	61	
	Total	14	6.626	4	793	18	7,419	
	Written to profit and loss for plants supplied gratis	...	851	. ...	.	.. ...	851	
	Cultural operations	.	209		...	.....	209	
	Total ...	355	44.091	46	1,404	401	45,495	

Form No. 51. [*Suggested.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Area of Forest tracts protected from fire during the dry season of 1885 (to accompany Report for 1884-85).

Division.	Forest Tracts.	Up to 30th June 1884.		During Dry Season of 1885.				Total cost up to 30th June 1885.	Year when protection commenced.
		Area actually protected.	Total cost.	Area attempted to be protected.	Failures.	Area actually protected.	Amount expended.		
		Acres.	Rs. A. P.	Acres.	Acres.	Acres.	Rs. A. P.	Rs. A. P.	
Ajmere ...	Mohwa Bir and Madar Hill ...	2,812	55 11 6	2,812	...	2,812	...	55 11 6	...
	Nag Pahar ...	2,660	160 10 3	2,660	...	2,660	30 7 11	191 2 2	1880
	Taragarh Valleys ...	1,016	318 14 1	1,016	...	1,016	24 7 11	343 6 0	1874
	Srinagar Bir ...	3,575	67 8 6	3,575	30	3,545	15 1 0	82 9 6	1880
	Rajaosi tract ...	1,260	200 1 1	1,260	...	1,260	33 14 10	233 15 11	1880
	Danda tract ...	1,244	63 0 5	1,244	...	1,244	20 4 10	83 5 3	1882
	Rajgarh ...	2,885	...	2,885	...	2,885	...	...	1884
	Makarwali Hokran ...	...	...	3,000	...	3,000	...	...	1885
	Total ...	15,449	865 13 10	18,452	30	18,422	124 4 6	990 2 4	
Merwara ...	Chang ..	2,341	119 15 3	2,341	...	2,341	31 15 9	151 15 0	1881
	Huttun and Sheopura ...	2,920	12 12 0	2,920	15	2,905	...	12 12 0	1882
	Biliawas and Taragarh ...	3,172	607 10 6	3,172	...	3,172	32 8 6	640 3 0	1874
	Todgarh and Barakhan ...	40,048	4,161 10 3	40,048	...	40,048	282 4 0	4,443 14 3	1874
	Dilwara and Chang Birs ...	235	..	235	...	235	...	..	...
	Borwar and Kotra ...	4,543	51 1 0	4,543	...	4,543	15 15 6	67 0 6	1882
	Anspahar ...	1,466	352 14 0	1,466	...	1,466	28 3 6	381 1 6	1877
	Dewair tract ...	12,201	418 12 0	12,203	...	12,203	80 4 8	499 0 8	1881
	Benjari Mandlan ...	4,500	...	4,500	...	4,500	10 11 6	10 11 6	1884
	Amner ...	2,300	...	2,300	2	2,298	10 11 6	10 11 6	1884
	Total ...	73,726	5,724 11 0	73,728	17	73,711	492 10 11	6,217 5 11	
	Grand Total ...	89,175	6,590 8 10	92,180	47	92,133	616 15 5	7,207 8 3	...

Charged in previous years ...	...	6,411 6 0
Charged in 1884-85 ...	...	604 7 3
Charged in 1885-86 ...	...	191 11 0
Total ...		7,207 8 3

Annual Form No. 52. [*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Prosecutions for breaches of Forest Rules during 1884-85.

Forest Division and Civil District.		Cases pending from 1883-84.	NEW CASES OF THE YEAR.					Total cases.	DISPOSED OF DURING THE YEAR.						Cases pending at close of year.
			Injury to forest by fire.	Unauthorized felling or appropriation of wood and minor forest produce.	Grazing without permission or in tracts in which grazing is prohibited.	Other offences.	Total new cases of the year.		CONVICTIONS.		ACQUITTALS.		TOTAL.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons	
AJMERE	Mohwa Bir and Madar Hill.	...	...	10	...	...	10	10	10	18	...	...	10	18	...
	Nag Pahar	...	...	6	...	...	6	6	6	6	...	...	6	6	...
	Taragarh Valleys	...	...	2	...	...	2	2	1	1	1	6	2	7	...
	Makarwali	...	...	4	...	...	4	4	3	10	1	2	4	12	...
	Srinagar Bir	...	...	7	3	...	10	10	9	40	1	1	10	41	...
	Dauta	...	...	1	...	...	1	1	1	2	...	...	1	2	...
	Total	...	...	30	3	...	33	33	30	77	3	9	33	86	...
MERWARA	Chang	...	1	1	2	...	3	4	3	4	1	7	4	11	...
	Borwar Kotra	...	...	1	...	...	1	1	...	...	1	1	1	1	...
	Benjari	...	...	...	1	...	1	1	1	4	...	...	1	4	...
	Amner	...	...	1	...	...	1	1	1	1	...	...	1	1	...
	Dewair	...	...	1	6	...	7	7	7	20	...	4	7	24	...
	Sheopura	...	...	1	...	...	1	1	1	2	...	...	1	2	...
	Total	...	1	5	9	...	14	15	13	31	2	12	15	43	...
	Grand Total	...	1	35	12	...	47	48	43	108	5	21	48	129	...

Annual Form No. 53.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Summary of Revenue and Expenditure for 1884-85.

BUDGET HEADS.

REVENUE.

	Rs.	A.	P.
I.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY GOVERNMENT AGENCY :—			
(*a*) Timber	.....		
(*b*) Firewood and Charcoal	1,809	13	7
(*c*) Bamboos	.....		
(*d*) Sandal-wood	.....		
(*e*) Grass and other Minor Produce	.....		
II.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS :—			
(*a*) Timber	.....		
(*b*) Firewood and Charcoal	2,232	12	6
(*c*) Bamboos	63	10	3
(*d*) Grazing and Fodder Grass	5,266	13	7
(*e*) Other Minor Produce	470	7	4
III.—CONFISCATED DRIFT AND WAIF WOOD	.....		
IV.—REVENUE FROM FORESTS NOT MANAGED BY GOVERNMENT :—			
(*a*) Duty on Foreign Timber and other Forest Produce ...	.....		
(*b*) Revenue from Shared and Private Forests	.....		
V.—MISCELLANEOUS :—			
(*a*) Fines and Forfeitures	524	0	9
(*b*) Refunds	10	15	0
(*c*) Other sources	77	13	4
TOTAL REVENUE ...	10,156	6	4

EXPENDITURE.

A.—CONSERVANCY AND WORKS.

I.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY GOVERNMENT AGENCY :—			
(*a*) Timber	.....		
(*b*) Firewood and Charcoal	801	13	6
(*c*) Bamboos	.....		
(*d*) Sandal-wood	.....		
(*e*) Grass and other minor produce	.....		
II.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS	96	7	3
III.—CONFISCATED DRIFT AND WAIF WOOD	.....		
IV.—REVENUE FROM FORESTS NOT MANAGED BY GOVERNMENT :—			
(*a*) Duty on foreign timber and other forest produce ...	.....		
(*b*) Revenue from Shared and Private forests	.....		
V.—RENT OF LEASED FORESTS, AND PAYMENTS TO SHAREHOLDERS IN FORESTS MANAGED BY GOVERNMENT	.....		
VI.—LIVE STOCK, STORES, TOOLS AND PLANT :—			
(*a*) Purchase of Cattle	.....		
(*b*) Feed and keep of Cattle	34	6	4
(*c*) Stores, Tools and Plant	86	0	2
Carried forward ...	1,018	11	3

	Rs.	A.	P.
Brought forward ...	1,018	11	8
VII.—Communications and Buildings:—			
(a) Roads and Bridges	113	8	3
(b) Buildings	214	7	9
(c) Other Works	643	2	1
VIII.—Demarcation, improvement and extension of Forests:—			
(a) Demarcation	53	8	3
(b) Compensation for Land and Rights	.....		
(c) Surveys and Working-Plans	.....		
(d) Plantations	1,404	5	11
(e) Protection from Fire	604	7	3
(f) Other Works	1,058	14	10
IX.—Miscellaneous:—			
(a) Refunds	6	8	0
(b) Law Charges	.....		
(c) Other Charges	55	14	0
Total A.—Conservancy and Works ...	5,173	7	7

B.—Establishments.

I.—Salaries:—			
(a) Conservators	.....		
(b) Superior Officers	3,000	0	0
(c) Subordinate Forest and Depôt Establishments	4,663	10	7
(d) Office Establishments	1,480	15	3
(e) Deputation and Special Allowances	.....		
II.—Travelling Allowances:—			
(a) Conservators	.....		
(b) Superior Officers	1,101	9	9
(c) Subordinate Forest and Depôt Establishments	292	3	2
(d) Office Establishments	39	9	6
III.—Contingencies:—			
(a) Stationery	23	7	3
(b) Carriage of tents and Records	167	7	8
(c) Rents, Rates and Taxes	165	0	0
(d) Pay of Police Guards	.....		
(e) Official Postage	58	13	6
(f) Sundries	149	6	9
Total B., Establishments ...	11,142	2	8
Grand Total of Expenditure ...	16,315	10	3

Annual Form No. 54.—[*Prescribed.*]

FOREST DEPARTMENT, INDIA, AJMERE-MERWARA DIVISION.

Account Current for the year 1884-85.

Dr. | Cr.

	Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.
To Cash Balance	.....	147 13 11	By Expenditure, as per Form No. 53 ...	.....	16,315 10 3
„ Revenue, as per Form No. 53	.....	10,456 6 4	„ Deposits	.....	.....
„ Service Funds	.....	.....			
„ Deposits	.....	3 2 1			
„ Forest Cash Remittances (Local)—			„ Forest Cash Remittances (Local)—		
Forest cheques drawn	16,101 0 10	.....	Remittances to Treasuries	9,948 13 8	.....
Inter-Divisional Transfers	261 8 8	16,362 9 6	Inter-Divisional Transfers	.....	9,948 13 8
			„ Advances Recoverable	.....	1,067 11 8
„ Advances Recoverable	.....	904 15 1	„ Suspense	.....	.....
„ Suspense	.....	.....	„ Account Current (other Governments) ...	.....	.....
„ Account Current (other Governments) ...	.....	.....	„ Inter-Departmental Transfers	.....	507 8 8
„ Inter-Departmental Transfers	.....	.....	„ Cash Balance	.....	35 2 8
Total ...	.....	27,874 14 11	Total ...	...	27,874 14 11

Annual Form No. 55.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Outstandings and Liabilities on account of Contractors and Disbursers for 1884-85.

Division.	Department Debtor.			Department Creditor.			Balance Due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payment made during year.	At close of year.	To Department (Outstandings).	By Department (Liabilities).	
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Ajmere-Merwara ...	17 10 4	904 15 1	922 9 5	1 10 6	1,067 11 8	1,069 6 2	146 12 9	.....	
Total ...	17 10 4	904 15 1	922 9 5	1 10 6	1,067 11 8	1,069 6 2	146 12 9	.....	

Annual Form No. 56.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Revenue received and Outstandings on account of Revenue during 1884-85.

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue During Year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
Ajmere-Merwara	.....	482 8 0	9,973 14 4	10,456 6 4	10,456 6 4	...	
	Total ...	482 8 0	9,973 14 4	10,456 6 4	10,456 6 4	...	

Annual Form No. 57.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Financial results of the year 1884-85.

Division.	Timber and other produce removed from the Forests by Government Agency.		Other revenue.		Formation, protection and improvement of forests.	Total.		Remarks.
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Ajmere-Merwara ...	1,810	802	8,646	4,616	10,898	10,456	16,316	
Total	1,810	802	8,646	4,616	10,898	10,456	16,316	

Annual Form No. 59.—[*Suggested.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Outturn of timber and other produce cut and collected by Government Agency during the year 1884-85.

Division.	PRODUCE CUT AND COLLECTED.				Remarks.
	How obtained.	Description.	Number or quantity.		
			Maunds.	Cubic feet.	
Ajmere and Merwara ...	Compound	Charcoal	1,329	...	
	Coppice	Firewood	2,461	...	
	Flush cutting ...	Do.	100	...	
		Total ..	3,890	...	

Annual Form No. 61.—[*Suggested.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Sales of Timber and other Produce cut and collected by Government Agency during 1884-85.

Division.	Depôt or locality.	PRODUCE SOLD.				Remarks.
		Description.	Number or quantity.			
			Mds.	srs.	Cubic feet.	
Ajmere-Merwara	Ajmere	Firewood ...	996	16	...	
	Sendra	Firewood ...	955	25	...	
	Beawar	Firewood ...	408	39	...	
		Total Firewood ...	2,361	0	...	
	Sendra	Charcoal ...	688	0	...	
	Beawar	Charcoal ...	440	0	...	
		Total Charcoal ...	1,128	0	...	

Annual Form No. 62.—[*Prescribed.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Account of Timber and other Produce cut or collected by Government Agency and brought to Sale Depôts or sold locally during the year 1884-85.

Particulars.	Number or quantity.		Total of each head (Number or quantity.)		Particulars.	Number or quantity.		Total of each head (Number or quantity.)	
	Maunds.	Cubic feet.	Maunds.	Cubic feet.		Maunds.	Cubic feet.	Maunds.	Cubic feet.
Received from the forests and sold locally					*Sold locally—*				
Firewood	2,561	...	...	...	Firewood	2,361	...	...	...
Charcoal	1,329	...	3,890	...	Charcoal	1,128	...	3,489	...
					Used by Department				
					Firewood	200	...	200	...
					Balance				
					Charcoal	201	...	201	...
Total ...	...	...	3,890	...	Total ...	...	...	3,890	...

Form No. 63.—[*Suggested.*]

FOREST DEPARTMENT, AJMERE-MERWARA.

Timber and other produce cut, collected, and removed from the forests by Consumers or purchasers, including pasture, during the year 1884-85.

Division.	Produce removed.			Amount of Revenue.	Amount actually realised.	Remarks.
	Description.		Number or quantity.			
				Rs.	Rs.	
Ajmere-Merwara	Firewood	Maunds.	22,396	1,687	1,687	Estimated.
	Firewood, standing... ...	...	30 acres	463	463	
	Dandas	...	3,000	75	75	
	Balis	...	21	3	3	
	Kamris	...	24 loads & 140	5	5	
	Bamboos	...	5,020	64	64	
	Grass	...	Sold by auction and locally.	2,953	2,953	
	Grazing	...	57,123*	2,314	2,314	* Including cattle passing through Dewair Pass.
	Fruits, plants, &c. ...	...	...	470	470	
	Total	...		8,034	8,034	

AJMERE SUB-DIVISION.

Forest Revenue for the year 1884-85.

Budget Heads.	Mohwa Bir and Madar Hill.	Taragarh Valleys.	Nag Pahar.	Sri-nagar.	Rajaosi.	Danta.	Rajgarh.	Makarwali Hokran.	Shikast Masjid.	Ajmere Nursery.	Bir garden.	General.	Total.	REMARKS.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
IIb Firewood and charcoal	215 14 0	38 12 0	354 9 0	33 8 0	42 8 0	58 0 0	...	...	5 14 0	18 0 0	1 2 0	...	791 3 0	
IIc Bamboos ...	...	0 10 3	...	...	...	...	...	...	...	...	...	...	0 10 3	
IId Grass and grazing ...	797 9 0	188 10 2	1,413 0 0	157 12 2	108 7 0	179 6 8	0 12 0	0 8 0	45 0 0	...	2 8 6	...	2,893 9 6	
IIe Minor produce ...	56 4 0	95 12 0	23 0 0	1 4 0	...	...	2 0 0	...	50 0 0	155 7 1	16 0 0	...	399 11 1	
Va Fines and forfeitures...	32 1 6	5 2 9	17 12 9	88 12 0	33 2 0	33 13 6	27 9 0	32 7 0	...	...	...	...	270 12 6	
Vc Miscellaneous ...	...	2 0 0	...	45 0 0	...	...	...	...	...	12 5 4	...	...	59 5 4	
Total ...	1,101 12 6	330 15 2	1,808 5 9	349 4 2	184 1 0	271 4 2	30 5 0	32 15 0	100 14 0	185 12 5	19 10 6	...	4,415 3 8	

Expenditure, 1884-85.

Budget Heads and Sub-Heads.	Makarwali and Madar Hill.	Nag Pahar.	Taragarh Valleys.	Srinagar tract.	Rajaosi tract.	Danta tract.	Rajgarh tract.	Makarwali Hakran.	Shikast Masjid.	Ajmere Nursery.	Bir garden.	General.	Total.	REMARKS.
A.—Conservancy and Works.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
AVIb Feed and keep of cattle	...	...	...	...	...	...	...	...	...	25 7 4	...	...	25 7 4	
AVIc Stores, tools and plant	...	...	...	...	...	...	...	...	...	...	...	59 4 0	59 4 0	
AVIIa Roads and Bridges	...	24 11 0	...	...	...	...	...	...	...	...	...	...	24 11 0	
AVIIb Buildings	2 0 0	...	3 0 0	9 10 0	0 5 0	...	80 11 9	90 0 0	...	...	16 0 0	...	201 10 9	
AVIIc Other Works	6 2 6	...	...	...	...	423 6 0	...	...	...	...	...	204 15 1	634 7 7	
AVIIIa Demarcation	0 4 0	0 2 0	0 3 0	...	...	...	35 2 0	14 4 0	...	...	...	0 8 0	50 7 0	
AVIIId Plantation: Pay of Malis and Bhistis ...	...	...	71 0 0	...	...	...	...	...	60 0 0	367 15 4	12 5 2	...	511 4 6	
AVIIId Plantation: Watering apparatus ...	0 15 3	...	6 6 9	...	...	...	...	...	2 4 1	37 7 10	1 14 0	...	48 15 11	>811 15 2
AVIIId Plantation: Sowing operations	25 1 0	...	...	12 8 3	...	8 8 9	...	...	...	25 11 0	...	38 8 0	110 5 0	
AVIIId Plantation: Planting trees	32 11 9	4 5 0	6 15 0	1 6 3	...	35 2 9	1 2 0	12 13 0	...	...	46 14 0	...	141 5 9	
AVIIIe Fire protection	...	29 1 5	23 1 5	15 1 3	18 14 3	18 14 3	...	...	...	...	...	...	105 0 4	
AVIIIf Fencing and other works	62 7 7	10 6 0	...	5 0 0	15 6 6	377* 6 6	411 8 0	25 0 0	...	...	...	18 15 6	896 2 1	* Includes Rs. 371-12-6 on account of 7 dams.
AIXc Miscellaneous		...	...	...	...	...	...	...	...	...	...	48 11 6	48 11 6	
Total ...	99 10 1	68 9 5	110 10 2	42 9 6	34 9 9	863 6 3	528 7 9	142 1 0	62 4 1	456 9 6	77 1 2	370 14 1	2,857 12 9	
B.—Establishments.														
BIb Pay of Superior Officers	...	...	...	...	...	...	...	...	...	...	...	3,000 0 0	3,000 0 0	
BIc Pay of Protective establishment ...	166 8 9	147 10 3	139 8 0	317 5 6	162 0 0	89 8 0	96 15 9	22 12 9	...	...	...	511 0 0	1,653 5 0	
BId Pay of Office Establishments	...	...	...	...	...	...	...	...	...	...	...	1,206 14 5	1,206 14 5	
BIIb Travelling Allowance of superior officers ...	...	...	...	...	...	...	...	...	...	...	...	1,101 9 9	1,101 9 9	
BIIc ,, Subordinate Forest establishment ...	...	...	...	...	...	...	...	...	...	...	...	61 14 2	61 14 2	
BIId ,, Office ... ,, ...	...	...	...	...	...	...	...	...	...	...	...	24 5 11	24 5 11	
BIIIa Country Stationery	...	...	...	...	...	...	...	...	...	...	...	11 11 6	11 11 6	
BIIIb Carriage of tents and records	...	...	...	...	...	...	...	...	...	...	...	77 7 9	77 7 9	
BIIIc Rents, rates and taxes	...	...	...	...	...	...	...	...	...	...	...	165 0 0	165 0 0	
BIIIe Official postage	...	...	...	...	...	...	...	...	...	...	...	44 5 6	44 5 6	
BIIIf Sundries	...	...	...	...	...	...	...	...	...	...	...	115 10 9	115 10 9	
Total ...	166 8 9	147 10 3	139 8 0	317 5 6	162 0 0	89 8 0	96 15 9	22 12 9	..		...	6,319 15 9	7,462 4 9	
GRAND TOTAL ...	266 2 10	216 3 8	250 2 2	360 15 0	196 9 9	952 14 3	625 7 6	164 13 9	62 4 1	456 9 6	77 1 2	6,690 13 10	10,320 1 6	

MERWARA SUB-DIVISION.

Forest Revenue for the year 1884-85.

Budget Heads.	Chang Tract.	Huttun and Sheopura.	Biliawas.	Todgarh.	Dilwara and Chang Birs.	Anspahar.	Borwar and Kotra.	Dewair Tract.	Amner Tract.	Benjari Mandlan.	Beawar Nursery.	General.	Total.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
IIb. Firewood and charcoal ...	670 4 6	...	...	831 1 1	...	...	308 8 0	...	...	...	...	...	1,809 13 7
IIb. Do. do. ...	454 10 3	151 4 6	25 6 0	625 4 9	3 12 0	6 10 0	164 0 6	0 9 6	...	...	...	...	1,441 9 6
IIc. Bamboos	...	...	...	63 0 0	...	...	...	...	...	...	...	...	63 0 0
IId. Grass and grazing ...	294 1 6	253 2 0	163 9 0	594 10 0	46 0 0	89 8 0	458 12 0	413 12 7	...	...	...	...	2,373 4 1
IIe. Minor produce	...	...	...	27 13 0	...	...	...	13 4 0	...	...	29 11 8	...	70 12 3
Va. Fines and forfeitures ...	32 9 9	6 0 0	20 4 0	19 8 0	13 9 0	3 2 0	24 9 6	27 12 6	12 12 0	86 5 0	6 12 6	...	253 4 3
Vb. Refunds	...	...	...	...	...	...	10 15 0	...	...	...	...	...	10 15 0
Vc. Miscellaneous	5 8 0	...	...	...	1 8 0	...	...	...	...	...	11 8 0	...	18 8 0
Total ...	1,516 15 0	410 6 6	209 3 0	2,171 4 10	64 13 0	99 4 0	966 13 0	455 6 7	12 12 0	86 5 0	47 15 9	...	6,041 2 8

Expenditure, 1884-85.

Budget Heads and Sub-Heads.	Chang Tract.	Dilwara and Chang Birs.	Biliawas.	Anspahar.	Huttun and Sheopura, including extension.	Borwar Kotra.	Todgarh.	Dewair.	Amner.	Benjari Mundlan.	Beawar Nursery.	General.	Total.	Remarks.
A.—Conservancy and Works.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
AI*b*. Firewood and charcoal ...	189 2 0	...	3 8 0	...	...	67 9 6	550 10 0	...		...	...	...	801 13 6	
AII Timber and other produce removed by purchasers.	...	...	..	..	...	..	...	80 13 9	...	...	...	15 9 6	96 7 3	
AVI*b*. Feed and keep of cattle .	..	...	...	.	...	...	...	...	...	...	8 15 0	...	8 15 0	
AVI*c*. Stores, tools and plant ...		...	...	...	...	...	...	.	...	...	...	26 12 2	26 12 2	
AVII*a*. Roads and Bridges ...	70 11 3	..	...	...	...	...	17 12 0	0 6 0	...	...	...		88 13 3	
AVII*b*. Buildings	...	...	...	..	...	...	...	...	...	...	...	12 13 0	12 13 0	
AVII*c*. Other works	...	4 10 6	...	...	...	...	...	4 0 0	...	...	...	...	8 10 6	
AVIII*a*. Demarcation	0 8 0	...	...	...		1 5 3	...	...	...	...	.	1 4 0	3 1 3	
AVIII*d*. Plantations. Pay of Malis and Bhistis ...	...	29 12 0	...	...	...	...	...	...	...	?	238 0 0	...	267 12 0	
Cost of Watering apparatus	...	224 15 6	...	...	...	...	...	...	...	...	24 7 9	...	249 7 3	
Sowing operations ...	2 13 0	17 15 0	...	...	...	17 13 0	...	...	...	...	...	...	38 9 0	592 6 9
Planting operations .	...	1 0 0	...		...	0 8 0	...	...	...	35 2 6	...	...	36 10 6	
AVIII*e* Fire protection	31 15 9	...	32 8 6	28 3 6	...	15 15 6	298 4 0	92 7 8	...	..	...	...	499 6 11	
AVIII*f*. Fencing and other works ..	6 0 0	25 0 6	12 0 0	10 0 0	..	11 1 0	7 0 0	31 11 3	...	60 0 0	...	...	162 12 9	
AIX*a*. Refunds	...	...	...	..	...	...	6 8 0	...	..	.	...		6 8 0	
AIX*c*. Miscellaneous	...	...	...		...	...	...	...	...	...	..	7 2 6	7 2 6	
Total ...	292 2 0	303 5 6	48 0 6	38 3 6	...	114 4 3	880 2 0	209 6 8		95 2 6	271 6 9	63 9 2	2,315 10 10	
B.—Establishments.														
BI*c*. Pay of Protective establishment	186 1 6	73 14 9	180 4 0	180 0 0	140 0 0	227 13 9	642 10 1	354 14 3	62 8 0	144 0 0	..	818 3 3	3,010 5 7	
BI*d*. „ Office establishment ...	...	...	...	...	..	...	...	...	..	...	...	274 0 10	274 0 10	
BII*c*. Travelling Allowance of Protective establishment.	...	...	...	.	..	..	...	...	...	...	..	230 5 0	230 5 0	
BII*d*. Travelling Allowance of Office establishment.	...	...	...	..	..	..	...	...	...		...	15 3 7	15 3 7	
BIII*a*. Country stationery ...	...	...	..	...	...	...	...	...	.	...	...	11 11 9	11 11 9	
BIII*b*. Carriage of tents and records ...	.	...	.	...	..	..	...	...	...	...	...	89 15 11	89 15 11	
BIII*e*. Official postage	..	...	...	...	..	...	...	...	...	...	...	14 8 0	14 8 0	
BIII*f*. Sundries	...		...	...	...	.	...	...	...	...	...	33 11 3	33 11 3	
Total ...	186 1 6	73 14 9	180 4 0	180 0 0	140 0 0	227 13 9	642 10 1	354 14 3	62 8 0	144 0 0	...	1,487 11 7	3,679 13 11	
GRAND TOTAL ...	478 3 6	377 4 3	228 4 6	218 3 6	140 0 0	342 2 0	1,522 12 1	564 4 11	62 8 0	239 2 6	271 6 9	1,551 4 9	5,995 8 9	

APPENDIX A.

Annual Plan of Operations.

AJMERE SUB-DIVISION.

Mohwa Bir and Madar Hill Blocks.	*Remarks.*
Repairing Euphorbia fence.	Done.
Sowing Nim under "Euphorbia."	Partly done.
Sowing Khair and Khejra.	Work postponed.
Sowing Saler seed and planting Saler stumps.	Done.
Sowing Khejra, Babul and Khair.	Work postponed.
Sowing Dhak seed.	Done.
Cutting 10 acres experimental area.	Done.
Repairs to Forest Chauki.	Done.
Taragarh Block.	
Repairing Euphorbia fence.	Done where necessary.
Planting Mango and Sissoo plants to fill up blanks.	Partly carried out; results will be noted in next Report.
Watering of young trees.	Done.
Sowing Arinja and Babul.	Done; results to be noted in next Report.
Construction of bunds in Imlikund.	Not taken up. Danta taken instead.
Thinning Babul plantation.	Done.
Burning fire-lines.	Done.
Nag Pahar.	
Repairs to Euphorbia fence.	Done.
Repairs to stone walling.	Done.
Demarcating Pokhar side with an earthen mound.	Postponed for want of funds.
Taking up of the Pokhar garden.	Is being arranged.
Cutting 10 acres experimental area.	Done.
Repairs to road running to top of hill.	Done.
Burning fire-lines.	Done.
Srinagar Block.	
Repairing Euphorbia fence.	Done.
Making earthen mound for fence.	Postponed for want of funds.
Sowing Saler, Khair and Khejra.	Done; results will be noted in next Report.
Repairs to Forest Chaukis.	Done.
Rajaosi Block.	
Repairing Euphorbia fence.	Done.
Making earthen mound for fence.	Postponed for want of funds.
Burning fire-lines.	Done.
Danta Block.	
Repairing Euphorbia fence.	Done.
Sowing Nim and Arinja.	Done.
Planting Sissoo.	Done.
Constructing a new fire line from Khanda Kua along the path that leads to Bir.	Line burnt along Nasirabad road instead.
Rajgarh Block.	
Survey of boundary.	Done by Survey Department; maps not yet received.

APPENDIX A—*contd.*

Annual Plan of Operations—*contd.*

Ajmere Sub-Division—*concld.*

Rajgarh Block—contd.	*Remarks.*
Demarcating with boundary pillars and numbering them.	Done.
Constructing Euphorbia fence.	Partly finished.
Constructing two fire-lines.	One done, one postponed.
Ajmere Nursery.	
Repairs to malis' houses.	Done.
Maintaining nursery with an object of supplying trees to outsiders and for roadside planting only.	Done.
Selling plot of ground by malis' houses.	Not necessary.
Constructing Forest Officer's bungalow.	Plan given up.
Experiments to be started.	Done.
Demarcating Makarwali Hokran, and Nand Guda tracts.	Done. Nand Guda abandoned.

Merwara Sub-Division.

Chang tracts.	
Re-numbering boundary pillars.	Done.
Repairs to stone-wall fence.	Done.
Sowing Khejra and Arinja seeds.	Done; results to be noted in next Report.
Sowing Babul seeds.	Ditto ditto.
Planting Bamboos.	Postponed.
Burning fire-lines.	Done.
Repairs to road.	Done.
Cutting 30 acres of forest.	5 acres cut.
Borwar Kotra tract.	
Re-numbering pillars.	Done.
Construction of stone-wall fence.	Done.
Sowing Khair, Saler, Arinja seeds.	Done.
Planting Saler and Gol cuttings.	Done; results to be noted in next Report.
Cutting 20 acres of forests for firewood.	Partly cut.
Burning fire-lines.	Done.
Sheopura tract.	
Repairing fence.	Done, where required.
Burning fire lines.	Done.
Cutting 25 acres of scrub.	Not done; no purchasers found.
Anspahar tract.	
Construction of stone-wall fence.	Done.
Repairing and widening Bar and Taragarh road.	In course of construction.
Burning fire-lines.	Done.
Biliawas tract.	
Construction of stone-wall fence.	Done.
Planting Saler and Gol cuttings.	Done; results will be noted in next Report.
Sowing Khair, Arinja, &c.	Done with other seeds too.
Planting Bamboos.	Done.

APPENDIX A—*contd.*

Annual Plan of Operations—*contd.*

MERWARA SUB-DIVISION—*contd.*

Biliawas tract—contd.	*Remarks.*
Cutting Saler trees and converting into charcoal.	100 maunds Saler wood cut for charcoal. Work stopped owing to the difficulty in burning the wood.
Burning fire-lines.	Done.
Todgarh tract.	
Repairing and making new fence of stone-walling.	Repairs done where necessary, and new stone-wall fence made near Jaspalan.
Sowing and planting.	Done.
Repairing and widening Chipidevi Road.	Done.
Making a new road from Bagri to Debian-ghata.	Not done; no funds available.
Burning fire-lines.	Done.
Opening of block next to Bagri for removal of dry firewood.	Done.
Working Bagri Block for supply of charcoal to Railway.	Work in progress.
Grazing of cattle.	Allowed.
Selling of Bamboos.	Done.
Dewair tract.	
Constructing stone-walling fence.	Done in some places.
Construction of Forest Chauki at Chaplian.	No funds available.
Planting Saler and Gol cuttings.	Done; results will be noted in next Report.
Sowing Aritha, Khair and Rohira seeds.	Done; results will be noted in next Report.
Removing dry firewood, cut along fire-lines by villagers.	Very little wood removed by villagers.
Burning fire-lines.	Done.
Collecting grazing dues of Dewair pass.	Done.
Amner tract.	
Survey of boundary.	Taken up by the Survey Department; maps not yet received.
Erection of boundary pillars.	Done.
Construction of fence.	Not done yet; no funds.
Burning fire-lines.	Done.
Building a Chauki at Derra village.	No funds available.
Benjari tract.	
Construction of boundary pillars.	Done.
Do. stone-wall fence.	Work in progress.
Surveying boundary lines.	Done by Survey Department.
Sowing seeds.	Done; results will be noted in next Report.
Dilwara and Chang Birs.	
Repairing Euphorbia fence.	Done.
Sowing Nim, Arinja, and Khair seeds.	Done.
Planting out of Beawar Nursery plants.	Done.
Maintaining Nursery.	Done.

APPENDIX A—*concld.*

Annual Plan of Operations—*concld.*

MERWARA SUB-DIVISION—*concld.*

Beawar Nursery.	*Remarks.*
Fruit trees to be sent for.	Not done, as those planted last year are not doing well.
Nursery area to be limited to the growing of common trees.	Done.
General.	
Grazing to be allowed in open tracts.	Continued in all tracts during hot season.
Repairs to Forest Ranger's hut.	Done.
Girth measurement of Sendra plantation.	Done.
Keeping up plantation journal.	Done.
Record of felling operations.	In progress.
Record of new reserves.	In progress.

Appendix B.

METEOROLOGICAL OBSERVATIONS.

Results of Meteorological Observations conducted at the Ajmere Forest Nursery, 1,640 feet above sea level. Observatories of the standard pattern. Cages with instruments 4 feet above ground.

Calendar year 1884.	Dry Minimum.		Dry Maximum.		Daily Mean Dry.		Mean Vapour Tension.						Mean relative Humidity.						Rainfall in inches.
							Under trees.			Outside.			Under trees.			Outside.			
	Under trees.	Outside.	Under trees.	Outside.	Under trees.	Outside.	From minima.	At 10h.	At 16h.	From minima.	At 10h.	At 16h.	From minima.	At 10h.	At 16h.	From minima.	At 10h.	At 16h.	
July	77·7	77·5	90·3	93·7	82·3	83·2	·780	·847	·827	·784	·864	·850	83	75	62	83	74	61	6·86
August	74·0	74·3	86·1	89·1	78·7	79·6	·733	·827	·845	·746	·831	·841	88	81	73	88	78	69	5·17
September	71·9	72·1	84·9	85·7	77·0	77·6	·740	·804	·799	·748	·832	·821	94	79	73	95	79	73	10·37
October	58·1	57·5	86·4	88·1	71·4	71·8	·441	·483	·485	·439	·522	·509	88	47	41	90	48	42	0·03
November	45·2	44·2	79·3	80·7	61·5	61·4	·256	·274	·285	·258	·299	·300	82	34	31	85	35	32	...
December	46·3	39·1	72·2	73·7	55·6	55·4	·202	·284	·291	·209	·279	·299	79	47	41	86	46	41	...
Averages ...	61·2	60·8	83·2	85·2	71·1	71·5	·525	·586	·589	·531	·604	·603	86	60	53	88	60	53	3·74

APPENDIX C.

WELL EXPERIMENTS. MOHWA BIR RESERVE.

Area and description of catchment above wells. The area is about 200 acres, with a catchment consisting of a fairly broad valley, with numerous small streams coming into the main nala. The rock is close to the surface and abounds in quartz, so that the soil is very poor. This tract was taken up in 1872.

Dates.	Well No. 1.	Well No. 2.	Well No 3.	Remarks.
	Feet.	Feet.	Feet.	
7th May 1884 ...	48·89	39·06	Well not cleared.	The south-west monsoon terminated on the 8th September, and, with the exception of a shower or two of no importance, there has been no rain since.
14th May 1884 ...	49·02	39·14	33·72	
21st May 1884 ...	49·27	39·27	33·93	The rainfall up to 1st March 1884 was 17·37 inches, taking it from 1st March 1883. No fires occurred during the year. All the better kinds of grass were cut by the end of December. Grass cutting was, however, continued till the end of February. The forest growth has made very good progress, and the ground is fast getting covered with Dasan, Bir, Khejra, Babul, Arinja, and Nim. The Khejra, Babul, Arinja and Nim came out in full leaf about the end of March, the rest in July. From Well No. 1 to No. 2 the distance along the bed of the nala is 1,417 feet; the distance from No. 2 to 3 along the nala (No. 3 is highest up the stream) is 1,573 feet. The wells are about the same distance from the bed of the nala and are not used for irrigation. The south-west monsoon set in on the 24th July, after which the water in the wells increased steadily.
28th May 1884 ...	49·37	39·35	34·04	
4th June 1884 ...	49·43	39·43	34·02	
11th June 1884 ...	49·56	39·56	34·18	
18th June 1884 ...	49·81	39·60	34·27	
25th June 1884 ...	49·69	39·60	34·43	
2nd July 1884 ...	49·60	39·68	34·52	
9th July 1884 ...	49·60	39·72	34·61	
16th July 1884 ...	49·81	39·89	34·72	
23rd July 1884 ...	49·93	39·89	34·81	
Average ...	49·50	39·52	34·30	

Govt. C. P. Press, Simla.—No. 739 H. D.—30-9-85.—60.